September · 1953

finish

THE MAGAZINE OF

Appliance AND

Metal Products MANUFACTURING

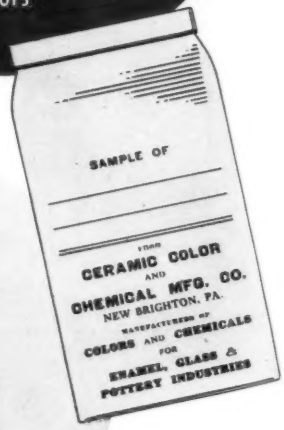
FROM RAW METAL TO FINISHED PRODUCT

KEEP SALES UP

Use a *NEW* "CERAMIC" COLOR

To Meet Your ENAMEL NEEDS

- Color Oxides
- Screening Colors
- Smelter Color Compounds
- Printing, Graining, Stamping,
- Banding, and Decal Colors



"Ceramic" makes a complete line of colors specifically adapted to meet the requirements of every branch of the enameling industry . . . colors for architectural sheets, signs, sanitary ware, household appliances, kitchenware, table tops, stoves and ranges . . .

Whether you want to match previous production or plan new color schemes, you can count on "Ceramic" for accurate duplication, uniformity, and workability. The colors you buy from "Ceramic" are pretested under conditions that simulate those in your own plant.

For a happy solution bring your color problems to "Ceramic."

We'll Send a Sample Pretested to Fit Your Production Routine

WENNING
CERAMIC COLORS
TRADE MARK

CERAMIC COLOR & CHEMICAL MFG. CO.
New Brighton, Pa., U.S.A.

Porcelain enamel is ideal for MODERN DESIGNS

This is one of the big advantages of Porcelain Enamel on Armco Enameling Iron:

You can adapt this modern finish to practically any design for the products you make. It may not even be necessary to change your present designs to assure uniformly good results—in your shop as well as when your products are in service.

Four important factors should be kept in mind when designing parts or products for porcelain enameling: (1) correct radii of curvature on all parts; (2) sufficient internal support at all points; (3) metal of sufficient thickness to resist warping or twisting during firing; and (4) the metal should be made specifically for porcelain enameling.

OFFERS SALES AIDS

Besides its adaptability to modern design, Porcelain Enamel stands out as a sales-aid in comparison with other finishes.

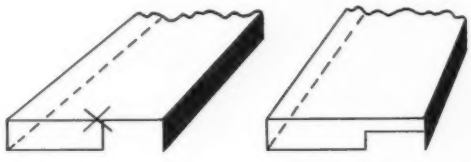
It is a "*lifetime finish*" that is not affected by time or corrosion. It resists acids, and is not harmed by hot skillets, forgotten cigarettes, or even hot electric irons. What's more, stains and dirt come off easily when the surface is washed with soap and water.

Porcelain Enameled products can be supplied in any color and in any variation of shades. Colors never "fade out" or lose their original luster.

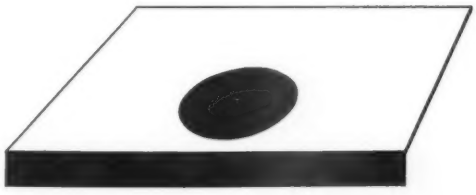
UNIFORM QUALITIES

Of course, the metal beneath the Porcelain Enameled surface must have excellent bonding qualities, flatness, and uniform fabricating characteristics. That is why more manufacturers have used more Armco Enameling Iron over a longer period than any other enameling base. That is why too it has become known as the "World's Standard Enameling Iron."

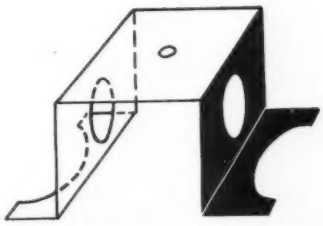
The radii of curvature of metal parts to be porcelain enameled should always exceed 3/16".



Lack of support at Point X could result in flexing and chipping. Maintaining part of flange (sketch at right) corrects this.



Flanging of edges near large holes gives needed support, which prevents deforming of metal during firing.



Support lugs or clips should be of lighter gage and cut away at junction points, to reduce area of double-thick metal to be heated when coatings are fired.

ARMCO STEEL CORPORATION

3712 CURTIS STREET, MIDDLETOWN, OHIO • PLANTS AND SALES OFFICES FROM COAST TO COAST • EXPORT: THE ARMCO INTERNATIONAL CORPORATION

ARMCO

McDANEL

Metal Covered

Porcelain Laboratory Mill Jars

These McDanel Metal Covered Jars are unbreakable in normal routine use.

That means longer life. While the price is competitive with the all porcelain jars, the longer service spells out a distinct saving.

There is a further saving in the porcelain lining which may be used until worn as thin as the paper on which this message is printed, with no chance of spilling the batch.

Porcelain Linings have straight sides and may be easily and thoroughly cleaned.

Made for both Roller and Cradle type mills. The Roller type jars have non-slip live rubber tires, which are so constructed as to stay in place at all times.

Other features include live soft rubber gasket with close fitting cover that may be tightened by hand—no danger of cracking cover — no chance of leaking — Jar and Cover are surface ground after firing to make absolute fit — Neoprene gaskets for oil base grinding.

Discharge covers are available for easy pouring while retaining ball charge.

Write today for "McDanel Industrial Porcelain" catalog

McDANEL REFRACTORY PORCELAIN CO.
BEAVER FALLS, PENNA.

GRINDING BALLS . . . MILL LINING BRICK . . .
MILL HEAD ASSEMBLIES . . . TANK & DRYER LININGS

contents in front

NICKELOID METALS STARTING POINT FOR PRODUCT DESIGN

MORE THAN A METAL, IT'S A METHOD

Nickeloid Metals—brilliant pre-finished metals in sheets or coils—are ready-plated with the finest, quality plating of chromium, nickel, copper or brass. Being finished, they are ready for fabrication and assembly. They require no further finishing. They are durable, easy to fabricate. Nickeloid Metals provide a production short-cut that usually provides a basic economy in cost. Thus Nickeloid Metals are more than a raw material . . . they represent a streamlined method of production: raw material to finished part. Many operations are eliminated or short cut. Nickeloid Metals deserve further study on the part of every progressive manufacturer.

Nickeloid pre-plated finishes available in these base metals: Steel, Zinc, Brass, Copper, or Aluminum.

CREATES A NEW SALES APPEAL

The appeal to the buyer of products that have that smart, modern finish, is undeniable. The list of successful applications that have employed Nickeloid Metals to enhance eye appeal is long. From buttons to rotisseries . . . smart designers and alert manufacturers are cashing in on the basic production economy and sales appeal offered by these pre-plated metals. Our representatives, located in most principal cities, will be glad to show you samples of successful applications. They will be glad to submit working samples of metal for experimental purposes. They will be glad to give you the benefit of Nickeloid's half century of experience in the fabrication of these brilliant, gleaming, durable metals.

Quality Metals Since 1898

AMERICAN NICKELOID COMPANY

PERU 20, ILLINOIS

MILLS: PERU, ILL. and WALNUTPORT, PA.

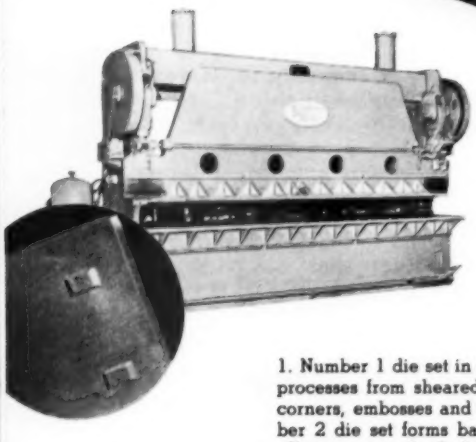
Sales offices in most principal cities

Cutting Costs for Hotpoint on Evaporator production

Struthers Wells PACKAGE UNIT

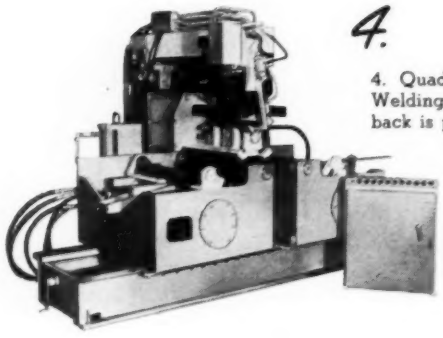
The Struthers Wells Package Unit production system ser HOTPOINT with maximum efficiency and economy producing evaporator units for the famous Hotpoint lin refrigerators and freezers. This production system ta basic sheet metal through integrated stages of formin the finished product—in small space, under one roof!

The Struthers Wells Package Unit system has additio benefits for the sheet metal product manufacturer, in all machine tools and tooling may be tested and proved pilot runs in a single plant—eliminating travel from pl to place to synchronize various forming operations fr different supply sources. Full details on this new sys gladly provided on request.



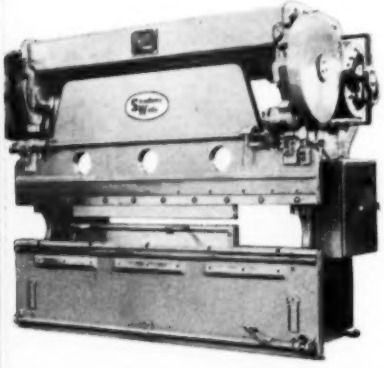
1.

1. Number 1 die set in Number 1 press brake processes from sheared blank, notches sheet corners, embosses and trims other end. Number 2 die set forms back U-shaped channel, offsets one end of sheet for overlap seam, punches necessary mounting holes.



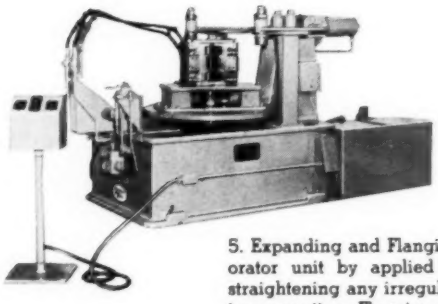
4.

4. Quadruplex Tangent Bender Welding Attachment, where evapora back is placed (on male die) and p formed wrapper sh wraps into rectangul shape around the back one operation—conclu ing by spot welding ov lapped seam.



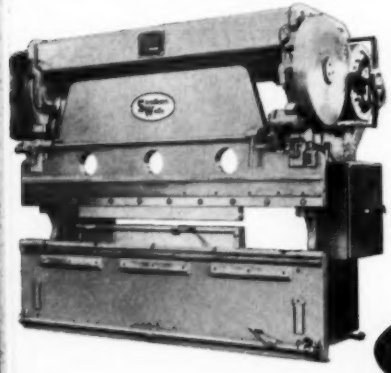
2.

2. Number 2 brake makes acute angle bend in Number 1 die station—which is flattened in lower station.



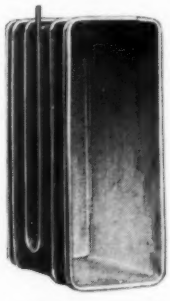
5.

5. Expanding and Flanging Machine stretches eva orator unit by applied pressure to four corne straightening any irregularities caused in tube bra ing operation. Flanging rolls feed in on evaporat back, and roller table rotates 180°, pinching shaped flange tightly around back of evaporat



3.

3. Number 3 press brake forms 90° double-thickness metal flange—completing preformed flat sheet. From here sheet goes to tube brazing area, and then to . . .



6.

6. After the above operations, the completed evaporator is sent to the assembly floor at Hotpoint for installation in refrigerator and freezer units. From start to finish, processing the original flat sheet of metal into the finished product has been rapid and direct, entailing a minimum of manual handling.

Struthers Wells

MACHINERY DIVISION

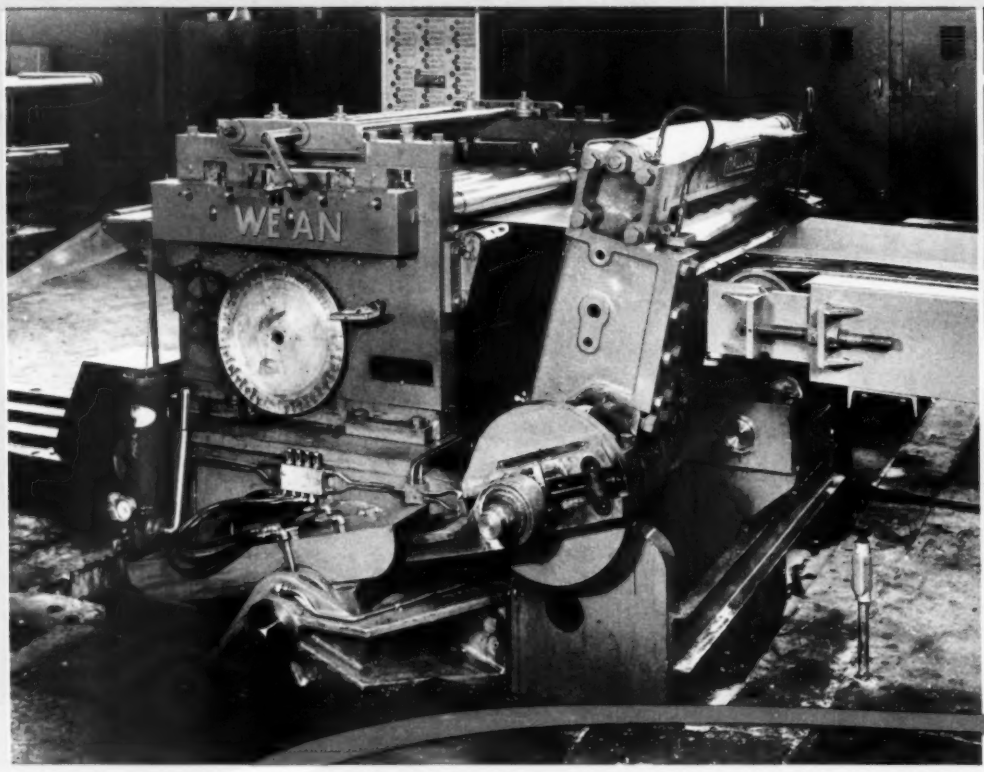
STRUTHERS WELLS CORPORATION

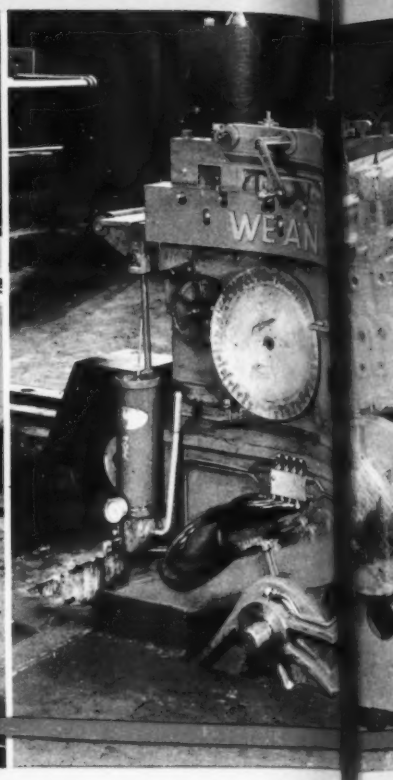
TITUSVILLE, PA.

Offices in Principal Cities

THE finish spotlight

Cribben & Sexton's new automatic gas home incinerator can be easily and inexpensively installed in the basement or utility room. Known as the Consum-All, the unit burns all dry material and heats the firebrick lining which, in turn, and without further fuel, completely dehydrates any wet mass, thereby completing the elimination of all refuse without smoke or odor. Since the firebrick wall acts as a heat reservoir, it, together with heavy insulation, substantially limits radiation of heat to the outside.

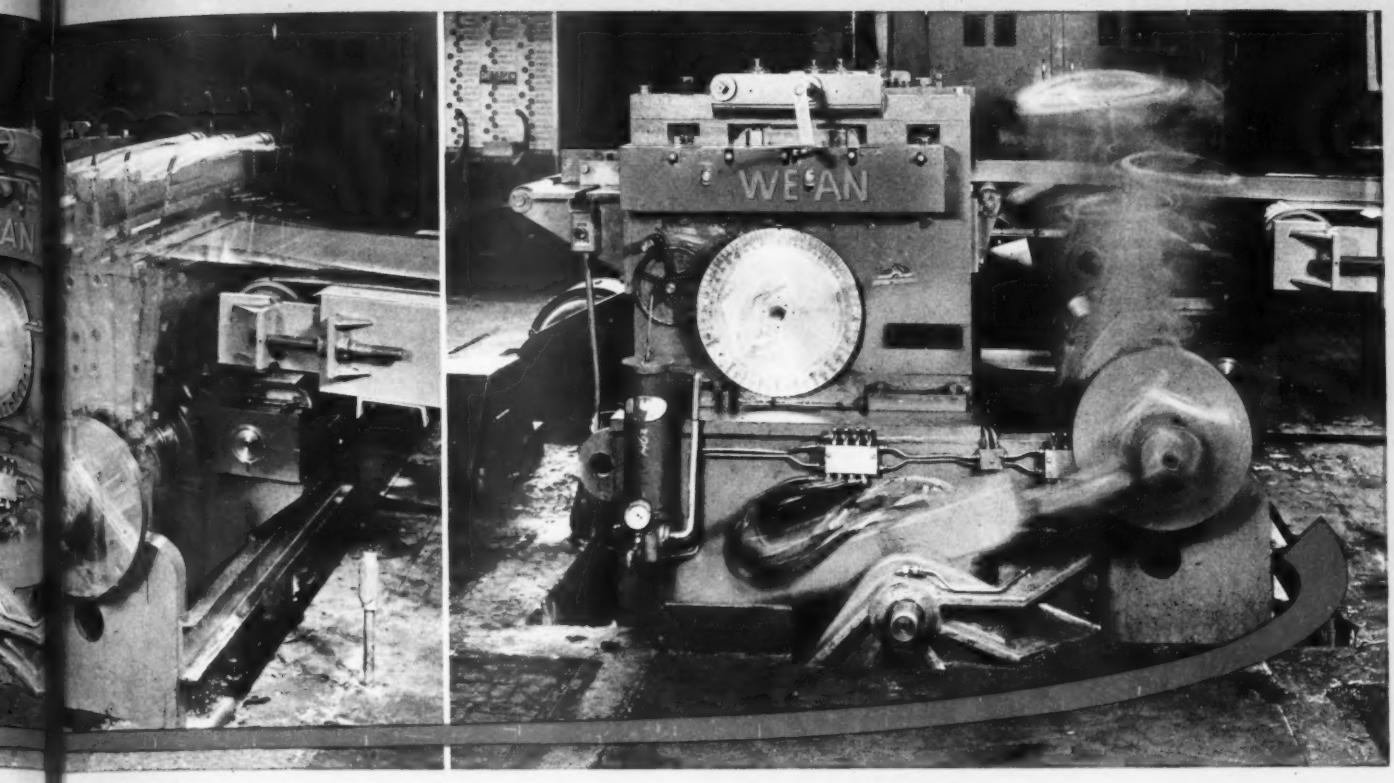




Here's the Amazing
That Makes 100 Cuts Per Minut

Saves Bulk Steel Users $20 a Ton

Wean salesmen have a quick and painless method for actually showing you, using your own figures, how, by purchasing steel in coil form, you can save in the neighborhood of $20 per ton on your steel costs. This is an offer you can't afford to overlook. If your plant is situated in an area where a Wean Line is operating we invite you to see it in operation ... talk with the people who operate it ... and we're sure you'll want this great system in your own plant.



ut to Resquared Tolerance

One-hundred cuts per minute to resquared tolerances . . . that's what users of the amazing new Wean Equipment Flying Shear and Slitting System are getting. That's why, if you are using steel in sheet form, it's important to you to get all the facts.

By purchasing steel in coil form you eliminate all the expensive mill extras—that sometimes amount to more than $1.00 per hundred weight. You reduce considerably both the personnel required to handle and inventory large steel stocks and the space needed to store various cut sizes of steel of the same gauge and analysis.

And this Wean System provides you with faster production. Here is a shear line that will cut to tolerance at the rate of 100 times per minute. Measure this against your present squaring-to-multiples rate and you'll quickly see how a single Wean line can keep a bank of high speed presses in constant operation.

NOW! THESE SAVINGS ARE EVEN MORE IMPORTANT

Rising costs are forcing steel makers to further increase the cost of extras. Some of these raises are already in effect. In the face of such action the Wean slitting and shearing line should now be even more important to you.

Wean

Mark of Distinction

COMBINATION SLITTING and SHEARING SYSTEMS

WEAN EQUIPMENT CORPORATION OFFICES

CHICAGO — CLEVELAND — NEWARK, N. J. — DETROIT

Cable Address: WEANCOR

AT YOUR SERVICE

CENTURY VITREOUS

Top men in the industry on Finance, Management, Research and Development, Production, Sales and Service combine their talents to serve you at Century.

Combine this talent with modern production equipment and trained plant personnel, and you can see why Century frits are second to none for all types of porcelain enameled products.

Some enamel plants depend upon Century for all of their enamels — ground coats, cover coats, acid resisting frits and special purpose enamels. Some who divide their purchases depend upon Century for ground coats with the "lifetime bond."

You can get the best in frits — that have been plant tested — and save money too if you "buy from Century." Management likes these frits for their money-saving features, and plant men like them for their trouble-free workability.

If you aren't using Century frit now, start right now by arranging for a plant trial soon.

TIME & PLANT PROVED FRITS

Every Century enamel is given a complete "proving ground" test before it is sold to our customers. In our own job enameling plant (box-type furnaces) and at General Porcelain Enamel & Mfg. Co. (continuous and box-type furnaces), they are applied *in production* to all types of fabricated metal parts before they are sold as "time-proved" frits.

CENTURY VITREOUS ENAMEL COMPANY

6641-61 S. Narragansett Ave., Chicago 38, Ill.

FRIT from CENTURY

FRIT MASTERS

finish SUGGESTION BOX

Vertical storage for sheet material reduces handling, storage expenses

A NEW sheet handler, designed to whip storage problems and damaged material losses in manufacturing plants, has a capacity of 2,500 pounds, yet weighs only 11 pounds. The device is said to greatly reduce handling expenses for all types of sheet materials, including steel, aluminum, plywood, glass, plastic, etc.

Sheet material is stored vertically on the sheet handler. Material is simply pulled out away from the remaining sheets, lifted off, and carried away—without scratching, gouging or otherwise damaging the surface of the sheet material.

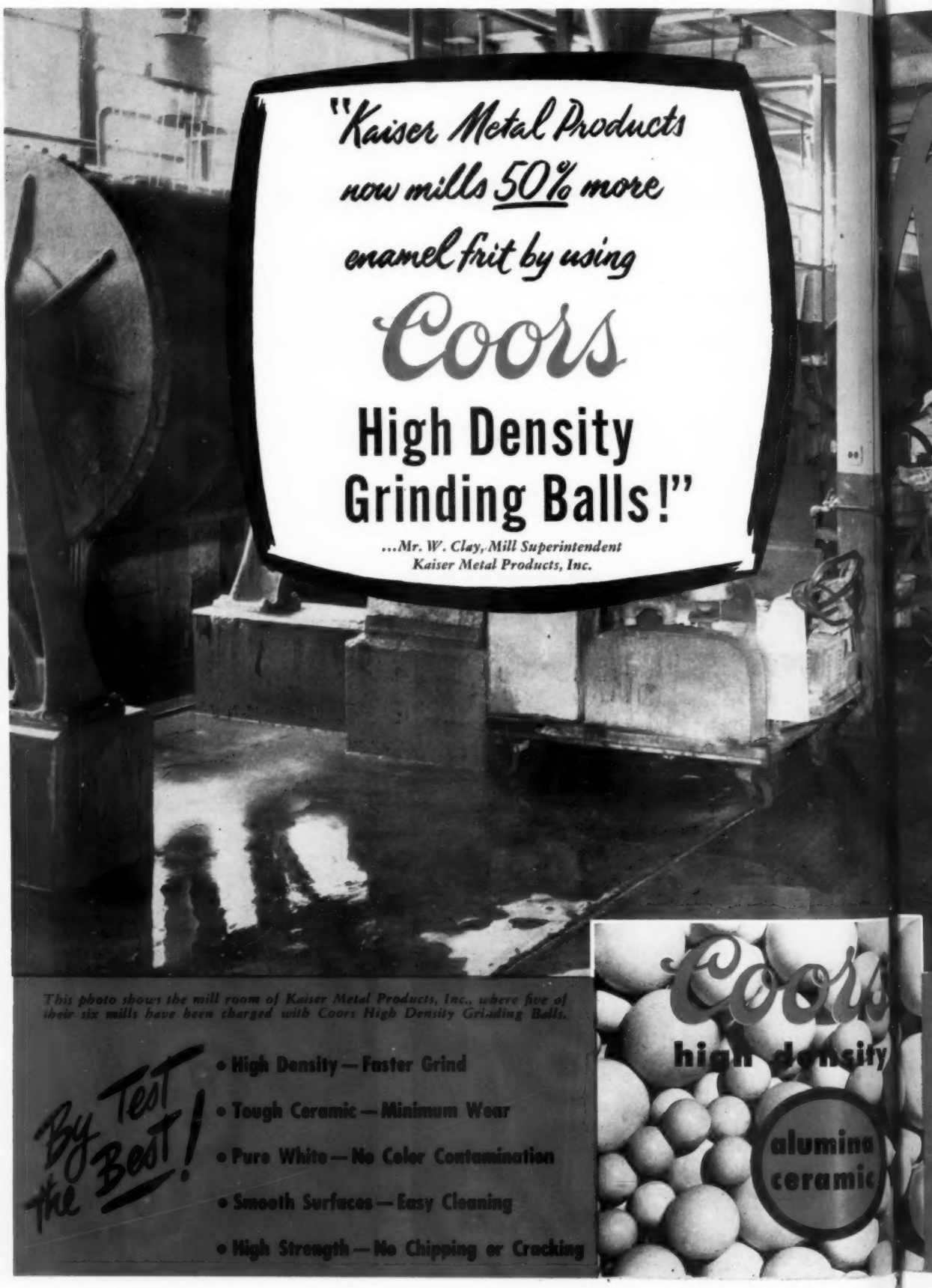
Depending upon the storage problem, the sheet handler can be used portably and stored away when not in use, or installed permanently where space permits and large amounts of sheet material must be kept on hand constantly. Additional space can be saved by placing sheet handlers back to back. When used portably, the sheet handler can be stored in less space than required by skids.

Floor space is held to a minimum, affording up to 200% more space utility than skids handling the same amount of sheet material.

The sheet handler is built of all-steel, arc welded construction.

Source for further information on sheet handlers may be obtained by writing directly to *finish*.

This new sheet material handler, which weighs only 11 pounds, has a capacity of 2,500 pounds.


"Kaiser Metal Products now mills 50% more enamel frit by using
Coors
High Density Grinding Balls!"
...Mr. W. Clay, Mill Superintendent
Kaiser Metal Products, Inc.
This photo shows the mill room of Kaiser Metal Products, Inc., where five of their six mills have been charged with Coors High Density Grinding Balls.
By Test the Best!
• High Density — Faster Grind
• Tough Ceramic — Minimum Wear
• Pure White — No Color Contamination
• Smooth Surfaces — Easy Cleaning
• High Strength — No Chipping or Cracking
Coors
high density
alumina ceramic

Kaiser Metal Products, Inc., reduced milling costs over 20% per 1000 pounds of frit milled

WITH ALMOST NO BALL WEAR!

"Here at Kaiser Metal Products, Inc., we have conducted tests using Coors High Density Grinding Balls in groundcoat preparation. As a result, we have charged five of our six mills with Coors High Density Balls. Also, we now charge 3000 lbs. of frit in a 2000 lb. mill (5'x 6') when using Coors High Density Balls and get our grind in 5½ hours.

"Using regular grinding balls, the grinding time for 1000 lbs. of frit is 2¾ hours; with Coors High Density Balls the grinding time for 1000 lbs. of frit averages 1.36 hours.

"In addition, our tests reveal that only 10.3% of the batch is retained in the mill when Coors High Density Balls are used, as compared with 16.1% when using regular grinding balls.

"In a comparison test of 51 millings, 50% more enamel was milled when using Coors High Density Balls, and there was a reduction in cost of approximately 22% per 1000 lbs. of frit milled. No replacement of high density grinding media was necessary during milling, nor at the dumping cycle; whereas 742 pounds of regular media was replaced. A similar reduction in power costs was noted."

Keep your costs down, get a better enamel faster and cheaper by charging your mills with Coors High Density Grinding Balls!

COORS PORCELAIN COMPANY

GOLDEN, COLORADO

CHEMICAL AND SCIENTIFIC PORCELAIN WARE — COORS U.S.A. — Internationally Recognized for Quality

National Sales Representatives...
LZP INDUSTRIAL CERAMICS
2500 West 7th Avenue, Denver 4, Colorado

Sole agent for the Enameling Industry... East of the Rocky Mountains
CHICAGO VITREOUS ENAMEL PRODUCT CO.
1427 South 55th Court, Cicero 50, Illinois

California Sales Representative...
MELVIN L. JONTZ COMPANY
5028 Alhambra Ave., Los Angeles 32, California

COORS PORCELAIN COMPANY
c/o LZP Industrial Ceramics
2500 West 7th Avenue, Denver 4, Colorado

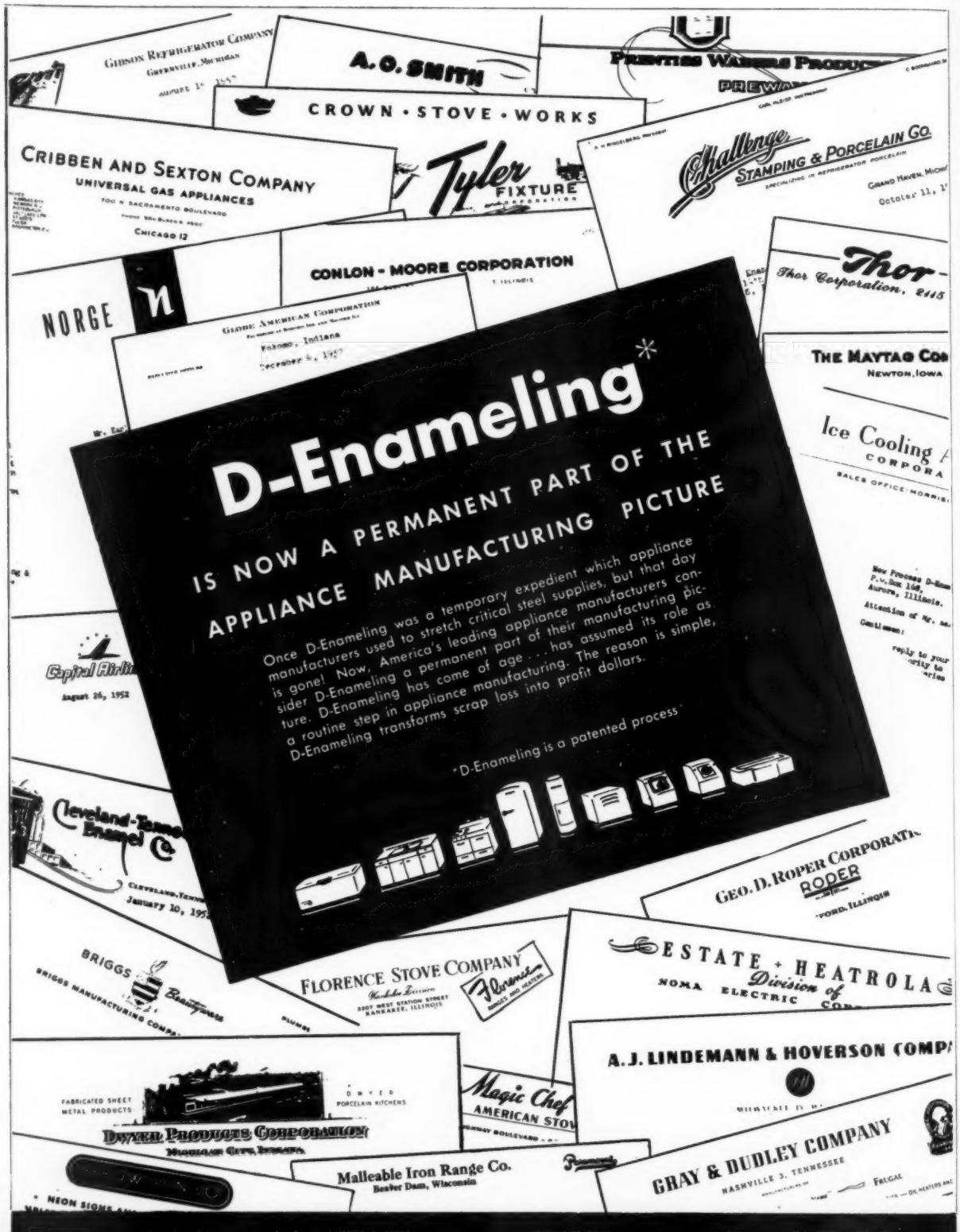
Please send price list, recommendations and samples of COORS Alumina Ceramic Grinding Balls.

*Name*_____ *Title*_____

*Company*_____

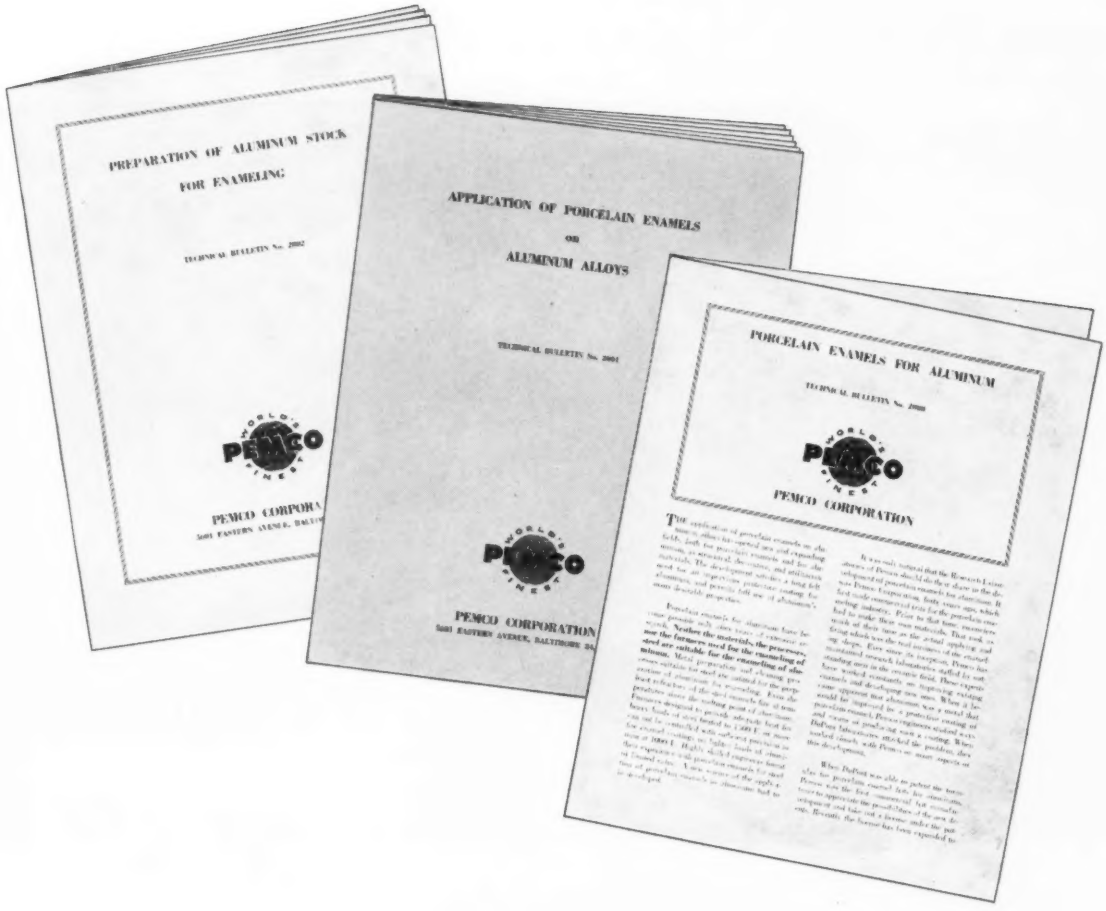
*Address*_____

*City & State*_____



New Process *D-Enameling* Corp.

Highland and New Haven Avenues • Aurora, Illinois



GENTLEMEN . . . we're ready for your questions on enameling aluminum

Just off the press are three comprehensive technical booklets on porcelain enamels for aluminum. Bulletin #2000 is a general picture of the uses, properties and production of enameled aluminum. Bulletin #2001 is a handbook on the steps to follow in applying porcelain enamels to aluminum. Bulletin #2002 covers the cleaning and pretreating of the aluminum for enameling. Send for any or all of these authoritative booklets. Pemco, pioneer manufacturer of commercial frits, has prepared this data as a service to forward-looking enamelers and aluminum fabricators interested in this vast new field.

WORLD'S PEMCO FINEST **CORPORATION**

5601 Eastern Avenue, Baltimore 24, Md.

"The World's Finest" PORCELAIN ENAMEL FRITS · GLAZE FRITS · PORCELAIN ENAMEL COLORS · GLAZE STAINS · GLASS COLORS · CERAMIC MATERIALS

FASTEST THING IN FASTENINGS®

"U" TYPE "J" TYPE

SPEED NUTS® are one-piece, self-locking, spring steel fasteners. Snap over panel edges or center hole locations . . . self retained in screw-receiving position for easier, faster assembly in "blind" locations. Available for a full range of screw sizes and panel thicknesses.

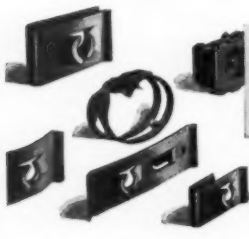
SPEED NUTS Saved 6,144 Assembly Hours, Thousands of Production Dollars

Reports the Trane Co., La Crosse, Wisconsin

"Every time we use a SPEED NUT, we save 14 seconds in production time", say Trane engineers. In one year, this leading manufacturer of air conditioning, heating and ventilating equipment netted 6,144 extra assembly hours, plus amazing savings in materials and materials handling. Misalignment of ventilator weld nuts and mounting holes slowed production continuously. Replacing them with "U" type SPEED NUTS, which snap in place by hand and provide floating alignment, ended this bottleneck. Costly installation of convector heater coil headers was overcome with "J" type SPEED NUTS. Snapped directly on frame members, they eliminated eight cast iron drilled and tapped ears and two welded support brackets. SPEED NUTS, applied after painting, eliminated masking or retapping of threads–licked rust problems.

Call in your Tinnerman representative for a FREE fastening analysis of your product . . . he may find comparable savings for you through greater fastening efficiency.

Send today for your copy of "SPEED NUT Savings Stories", a booklet of savings for industry. Write: TINNERMAN PRODUCTS, INC., Box 6688, Dept. 12, Cleveland 1, Ohio. *In Canada:* Dominion Fasteners, Ltd., Hamilton, Ontario. *In Great Britain:* Simmonds Aerocessories, Ltd., Treforest, Wales. *In France:* Aerocessoires Simmonds, S. A.–7 rue Henri Barbusse, Levallois (Seine).



TINNERMAN Speed Nuts®

MORE THAN 8000 SHAPES AND SIZES

THE finish LINE

We have received many comments on the evolution of our cover over a period of years. Early readers have had an opportunity also to observe the evolution in editorial content. This explanatory editorial from the January 1953 issue is repeated for the benefit of those who have more recently joined the growing list of regular *finish* readers.

Note:

With this issue,* *finish* reverts to a larger page size which was reduced to conserve paper during the shortage of World War II. Although this size gives our make-up artist additional leeway in the use of large illustrations, you will still be able to file *finish*, as many readers do, in a standard correspondence file.

*** January 1953**

THE 10TH YEAR OF EDITORIAL SERVICE

— to the Appliance and Metal Products Manufacturing field begins with this issue of **finish**.

In January, 1944, this publication made its bow to serve the metal products manufacturers with technical and practical information on metal finishing. From long experience our editors knew that fabrication, metal preparation and metal finishing were an inseparable triad in the average Appliance and Metal Products plant, so as the publication grew, all of these subjects were encompassed by our editorial program.

From raw metal to finished product

Then, four years ago, in January, 1949, we made a break from the conventional in industrial trade magazines and announced a Complete Editorial Service for the Appliance and Metal Products Manufacturer — "From Raw Metal to Finished Product." Due to the gradual change in editorial scope, as the publication grew in size, subject material was added without sacrificing space devoted to Finishing — so important to *all* metal products manufacturers.

Following an editorial campaign on improved packaging and shipping practices and reduction of in-transit losses for finished metal products, which was started in July of 1948, a new service was added in January '50 — the Safe Transit Section — concerning itself with materials handling, and packaging and shipping problems exclusively.

Thus, **finish** was the first to offer this important segment of American Industry an editorial service on all important aspects of metal products manufacturing from the time the raw metal enters the plant to the safe delivery of the finished product.

Unique distribution plan

Another point at which **finish** has strayed from the conventional is in its circulation policy. Within the Appliance plants, for instance, individual copies go to top management, purchasing, design engineering, works managers and key plant supervision. Our editors, therefore, have the problem of balancing editorial content so that there is material in each issue of importance to each of these groups.

In this connection we are *not* attempting to be "all things to all people." What we are earnestly trying to do is to give the Appliance and Metal Products Manufacturing field a single source for the most important technical and practical plant operating information, plus a news service and an editorial voice. Hundreds of letters from readers indicate that we have achieved at least some small measure of success in this effort.

The "man in the plant" writes *finish*

It has been the belief of our editors that despite many years experience in the industry served, we can not possibly provide for our readers the best in technical and practical information in so-called "staff written" articles. That is why you see such a high percentage of feature editorial material on plant operations written and by-lined by those who know the most about the subject covered — the men in the plant.

To back up our "field" or "on-the-production line" information, we have gradually rounded out an organization of associate editors and technical consultants, each of whom is recognized as an outstanding leader in his respective field. Whether the problem pertains to fabrication, metal preparation, finishing, designing, packaging or quality control, **finish** editors have the benefit of consultation with the top men in industry and education in the planning of editorial material on any of these subjects.

The issue of **finish** in which this editorial appears carries a greater number of pages (both editorial and advertising) than any preceding issue of its nine year growth. But we hope that it shall never be said that the measure of success for our editorial efforts is in the number of pages. We would like it to be measured in the value of our service to readers, which can best be judged by the personal and written comments to our editors.

What's in a name

Whether it is POST, TIME, LIFE, FORTUNE, or FINISH, the title of a magazine means little in itself, but for the regular reader it soon comes to mean a definite type of reader service. It is the purpose of our editors at **finish** to continue to offer the most complete and accurate editorial service for the Appliance and Metal Products Manufacturers. We welcome the comments, suggestions and constructive criticism of readers as one of our most valuable "yardsticks" in measuring our reader service.

Let us hear from you in '53.

Dana Chase

EDITOR AND PUBLISHER

Factors to consider when purchasing double-action presses

including information on die cushions for single-action and double-action presses

by Gordon M. Sommer • CHIEF ENGINEER, HAMILTON DIVISION, CLEARING MACHINE CORP., HAMILTON, OHIO

ONE of the first questions often asked in any discussion of double-action presses is: "Why are double action presses used?"

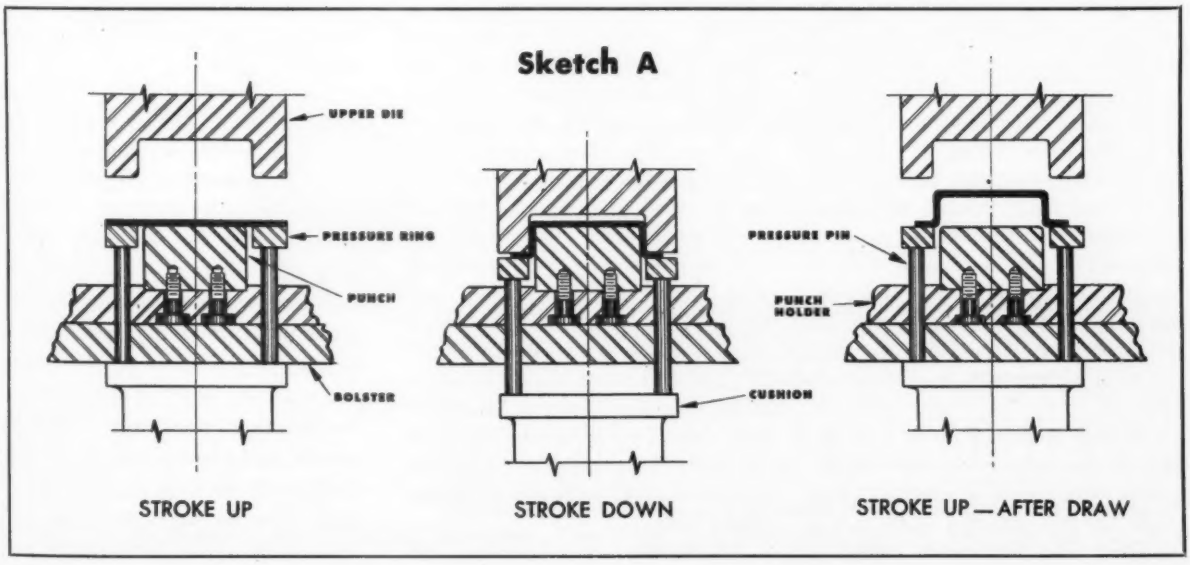
Basically, a double-action press is used to perform those draw operations which cannot be done successfully in a single-action press. The line of usefulness between both types of presses is sometimes not too distinct. However, past experience indicates, in general, the limitations of a single-action press.

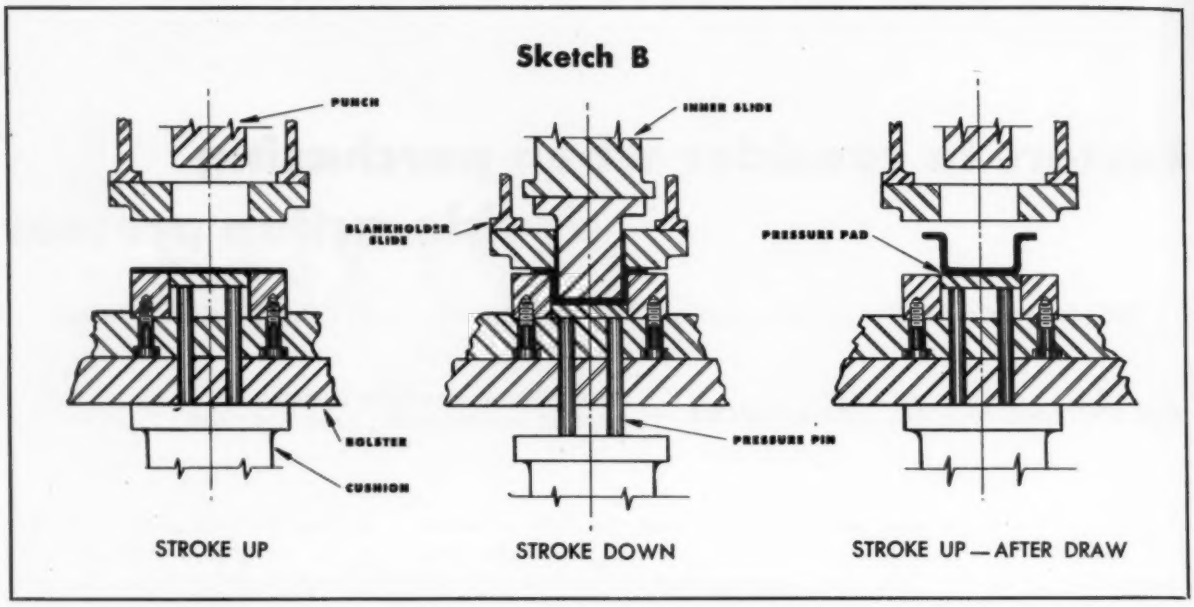
A double-action press is generally required on regularly shaped parts if the depth of draw is more than 7 inches; while for depth of between 4 to 7 inches, a single-action press may be desirable for some parts and a double-action for others. Regularly shaped stampings would ordinarily be round, square, rectangular, etc.

This limitation of single-action presses occurs because a die cushion is used for the blankholding pressure. The die cushion exerts a constant force upward but may be depressed by pressure greater than the cushion pressure. More energy is required to depress the cushion alone than might be available in the flywheel and motor of the press if the depth of draw becomes too great. Little or no energy is required in a double-action press to obtain the blankholding pressure; thus, the same stampings can be produced with a much smaller flywheel and motor. In practice, a single-action press of considerably greater tonnage capacity is used to produce the same stampings in order to secure the additional energy to depress the die cushion.

A double-action press is also desirable for performing draw operations on irregularly shaped parts of 3 inches depth or greater but for a different reason. With this type of

Schematic arrangement of a punch with a die cushion for drawing a round cup in a single-action press. The male punch is mounted in the lower die shoe. A draw ring mounts outside the lower punch and is supported on pressure pins which extend down through the die shoe and bolster, and contact the pressure pad of the die cushion. The die cushion exerts a constant, even pressure upwards, but may be depressed by pressure greater than its own. A female die mounted on the slide completes the die set-up.





A typical punch and die arrangement for use in a double-action press. The stamping in this type of press is drawn open side up, rather than open side down as is done in the single-action press. The die cushion blankholding pressure has been replaced with a blankholder slide. This blankholder slide is made to dwell under pressure and keep the blank from wrinkling while the drawing operation is being performed. The function of the die cushion in a double-action press is to keep the bottom of the stamping flat or to hold it to shape to prevent distortion and skidding while drawing, also to act as an automatic lift out.

press it is possible to adjust, separately, each corner of the blankholder slide to vary the blankholder pressure at various points around the periphery of the drawn stamping. On most irregular stampings this is almost a necessity.

The linear motion of the inner slide originates from a crank rotary motion as does the slide of a single-action press; therefore, it is necessary to consult a pressure curve for the press to determine the capacity of the inner slide throughout its stroke. The available pressure at midstroke might be as little as 25% of the rated capacity of the press because the press driving members are designed to exert full tonnage at a point near the bottom of the stroke. Estimation of the tonnage capacity required for the inner slide, then, is exactly the same as for a single-action press except that the blankholding pressure is not added to the draw pressure as it is with a single-action press.

The die cushion used in a single-action press is replaced with a blankholder slide which is power actuated from linkages attached to the crank motion. The blankholder slide is made to dwell under pressure and keep the blank from wrinkling while the drawing operation is being performed. The capacity of the blankholder of a double-action press is usually about two-thirds of the capacity of the inner slide. This ratio gives a blankholder pressure which is sufficient for most draw operations; however, particular attention should be given when drawing parts with sloping sidewalls such as wheelbarrow bodies and bathtubs.

When purchasing a double-action press, it is well to specify only the depth of draw to be performed without trying to specify the strokes of the two slides. This procedure will allow the press manufacturer to proportion these strokes so the optimum dwell action can be obtained with the blankholder slide. The blankholder slide stroke is usually about two-thirds of the inner slide stroke. It is not necessarily true that the depth of draw is one-half the stroke of the inner slide less clearance as with a single-action press because the depth of draw is dependent upon the amount of dwell built into the blankholder slide.

Die cushions are often used with double-action presses. Their function here is to help keep the bottom of the stamping flat and to lift the drawn stamping to the feed level of the die. A cushion locking device is frequently required if the drawn metal is thin to prevent the cushion from distorting the drawn part because the blankholder slide retains the upper rim of the part for a short time after the inner slide has started the upstroke. The locking device retains the cushion in its downward position and can be released at any part of the upstroke.

The production rate of a double-action press is always of prime importance because a production line may often consist of a double-action press followed by a number of single-action presses for secondary operations. The production rate of the entire line is dependent upon the double-action press. Since the draw speed is limited by the shape of the drawn part and the type of steel used, a double-action press can only be speeded up by causing the inner slide to approach the work at a high speed, slow down for the work cycle and again speed up on the upstroke.

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FIGURE I

Color control of white appliance finishes

how Westinghouse handles a problem of prime importance to all producers of appliances

by H. L. Farber • CHIEF CHEMIST, WESTINGHOUSE ELECTRIC CORPORATION, MANSFIELD, OHIO

finish

The control of the white color used on the various appliances such as refrigerators, ranges, sink cabinets, dishwashers, washing machines, dryers, roasters and water heaters presents somewhat of a problem since several different finishes and processes are used to get the desired results as far as a white finish is concerned. White porcelain enamel, paint finishes and plastics are all used on the products mentioned, and the color must match in order to satisfy customer requirements.

Since the products are finished in different locations using widely different finishing systems and processes, some accurate method of color control within established limits is necessary. In order to meet white color standards, it is essential to control the raw materials as well as the processes used in preparing and ap-

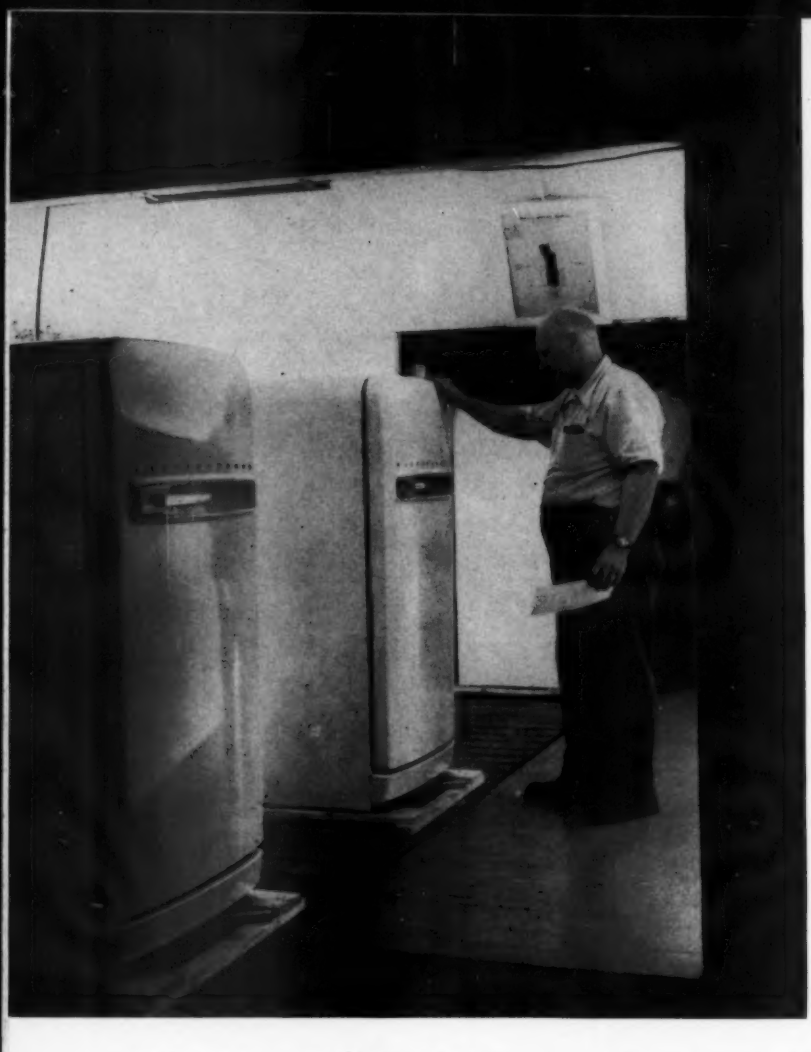


FIGURE ← I-A

plying these materials for finishes. In the finishing processes, the grinding, mixing, molding, baking, curing and firing are all important factors in the color of the resultant product. Since very small amounts of contamination due to handling of white materials can cause color change, it is quite essential that constant supervision be kept on the color, and that adequate methods be established for its control.

The most common method of color control is by visual comparison. (Figure I) The visual method is not always entirely adequate since human eyes and color impressions differ with individuals, and conditions such as light source and intensity as well as shadows and reflections are variable.

Visual comparison is used to check the various finished products at the end of the assembly lines for finish defects as well as color. In order to make the check as constant as possible, products on the assembly conveyor pass through a "tunnel of light" where the light intensity and distribution is such that shadows are eliminated and the lighting is constant regardless of outside conditions.

Editor's Note:

This article ties in with the "How White is White?" campaign which has been conducted by *finish* over a period of months.

It is expected that within a short time a report will be presented on important developments from the Committee on Color of Kitchen Appliances, Major Appliance Division, National Electrical Manufacturers Association.

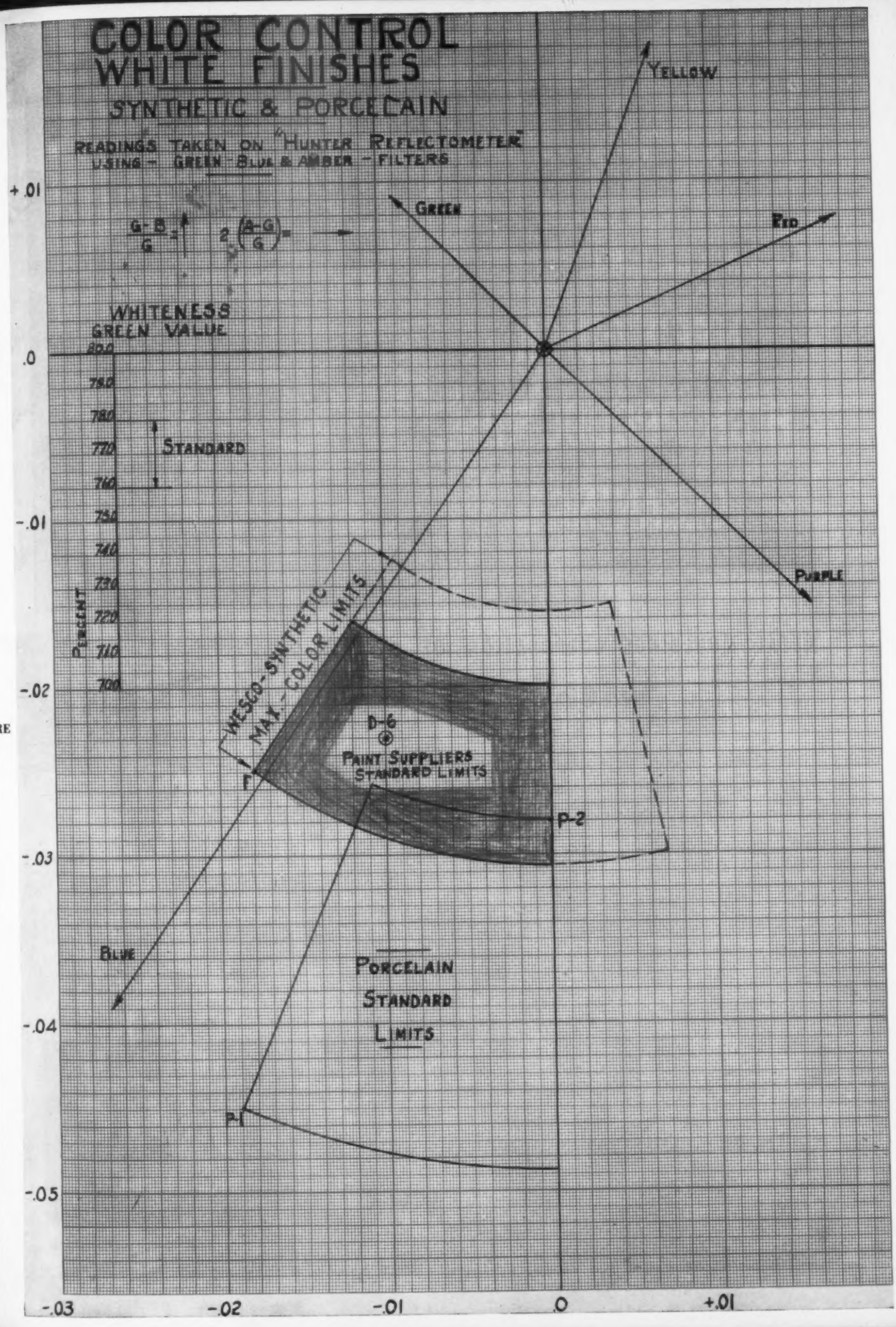
Along with the tunnel of light, it has been found advantageous to use an electronic device which measures a small constant area of color under fixed conditions as a more complete primary control of color. For a number of years, the Hunter reflectometer has been used to measure and control the color on the various products being finished with white coatings. (Figure II)

Color measurements are made on small panels in the amber, blue and green range of the spectrum by use of this reflectometer. The advantage of this method is that the measurements indicate colors numerically in order that they can be plotted on a chart.

One problem which must be solved in any color control program is that of limits, and since color is measured in several dimensions, namely, hue, value, and chroma (sometimes expressed as: color, whiteness and brightness), it cannot be described in simple terms. For the purpose of control of the white finishes, it has been found practical to set limits for

to Page 99 →

FIGURE II BELOW


COLOR CONTROL
WHITE FINISHES
SYNTHETIC & PORCELAIN
READINGS TAKEN ON "HUNTER REFLECTOMETER"
USING - GREEN - BLUE & AMBER - FILTERS
YELLOW
GREEN
RED
PURPLE
BLUE
WHITENESS
GREEN VALUE
STANDARD
PERCENT
WESCO-SYNTHETIC
MAX. - COLOR LIMITS
D-6
PAINT SUPPLIERS
STANDARD LIMITS
P-1
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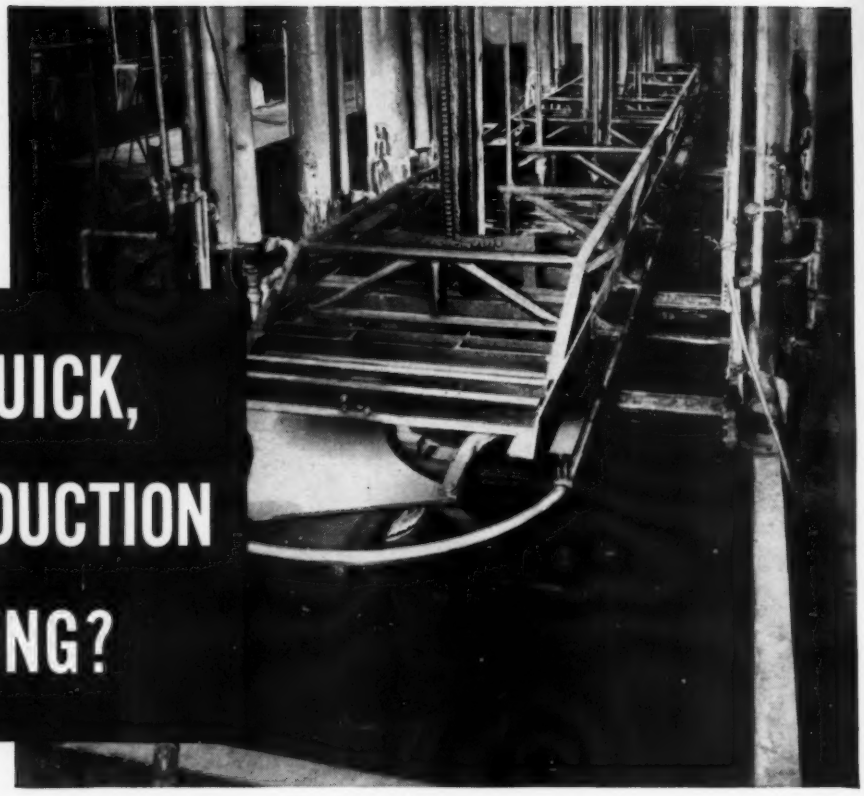

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Conveyorizing for S-M-O-O-T-H operation

how a metal furniture manufacturer eliminated some organic finishing difficulties by re-equipping for smoother conveyor travel

THE Summer Furniture Division of Logan Company, Louisville, recently solved a troublesome problem in the production of metal furniture. They had been experiencing chipping and dents to metal seats and backs for porch and lawn gliders, caused by jerky conveying through paint spray booths.

Smoother conveyor travel was achieved through the installation of a variable speed-drive trolley conveyor, with a double-enveloping worm gear speed reducer to provide the money-saving smooth operation. From the paint spray booths, this conveyor also carries the glider parts through a drying oven, then to the packing and shipping department.

It was indicated that this method of providing smooth conveyor operation is also used in Logan's Fire-screen Division where large fireplace screens are sprayed with a quick drying lacquer to preserve the fine polished brass finish on the frames.

Source for further information on variable speed-drive trolley conveyors with a double-enveloping worm gear speed reducer may be obtained by writing to finish.

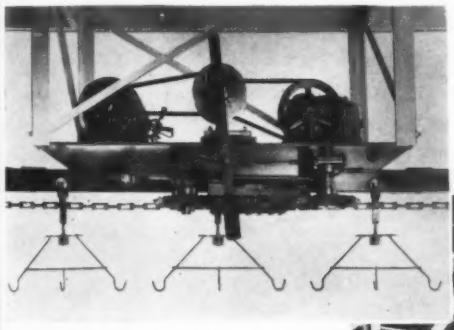
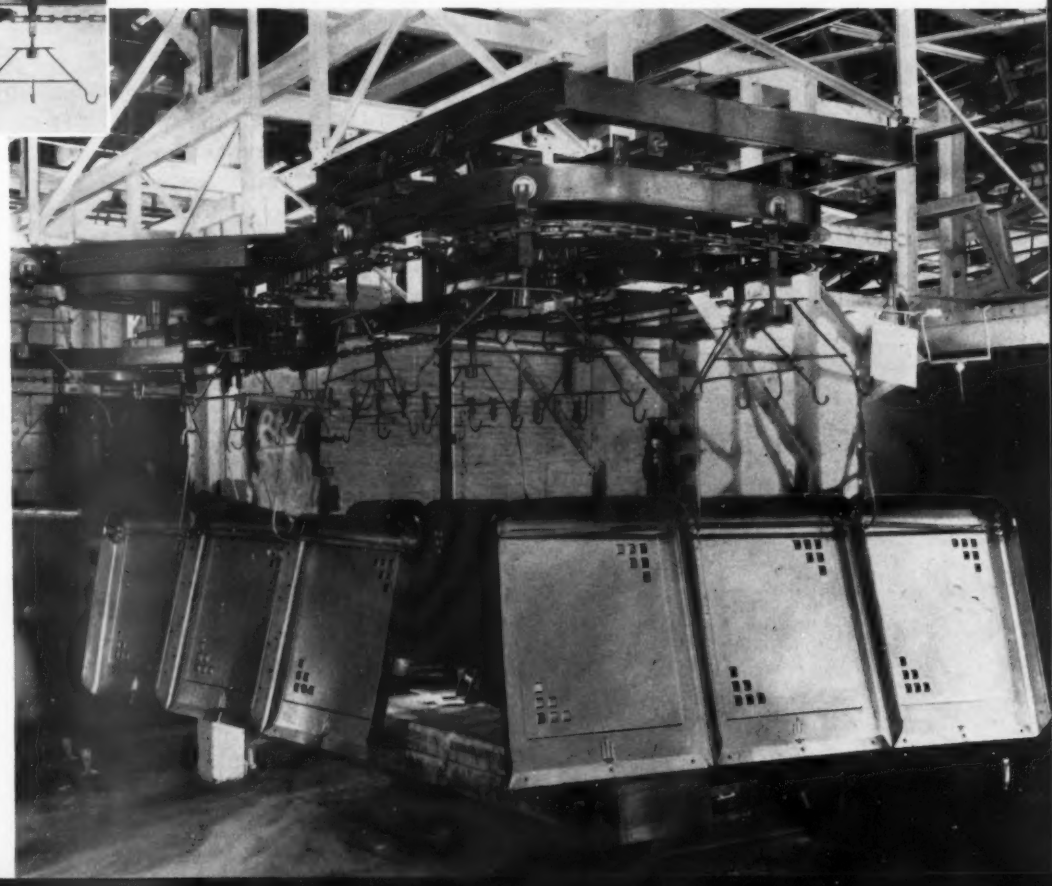


Photo taken in Logan's Summer Furniture Division where seats and backs of metal gliders are sprayed while travelling on trolley conveyor, then pass on through oven for drying, then to packing and shipping.



Above: Cone-drive double-enveloping worm gear speed reducer which has a center distance of three inches and a ratio of 50:1. Conveyor drive sprocket is mounted directly on the extended reducer shaft.

Porcelain enameling metal TV cones

straight-line production at Ing-Rich employs automatic spraying for one of the most recent products to use a ceramic coating

by J. L. McLaughlin • ASSOCIATE TECHNICAL EDITOR

Exclusive feature finish

American ingenuity in transposing the theoretical and laboratory curio into a mass product through applied and developed engineering practices has long been acknowledged abroad as well as domestically. A recent feat in this field is the process wherein 21-inch metal television cones are coated with porcelain enamel by means of an automatic spray machine. The process has been so perfected that large volumes of this product can be processed to extremely rigid tolerances in a minimum of time.

Enamel used on television cones is made from specially compounded heat-resisting frits. This is necessary to withstand the high temperature encountered during sealing in of the glass for receiving of the picture image.

The application system as described here was developed at Ingram-Richardson, Inc., Frankfort, Ind., at the request of a large tube manufacturer. The specifications for acceptance standards for production are much higher than is normal in the enameling industry for those parts of the cone forming the side walls, and virtual perfection is demanded in the areas destined to come in contact with the glass used for sealing the ends of the cone.

Editor's Note:

This is another in a series of articles on the steel television "tube"—one of the most interesting recent developments in the appliance and home products field.

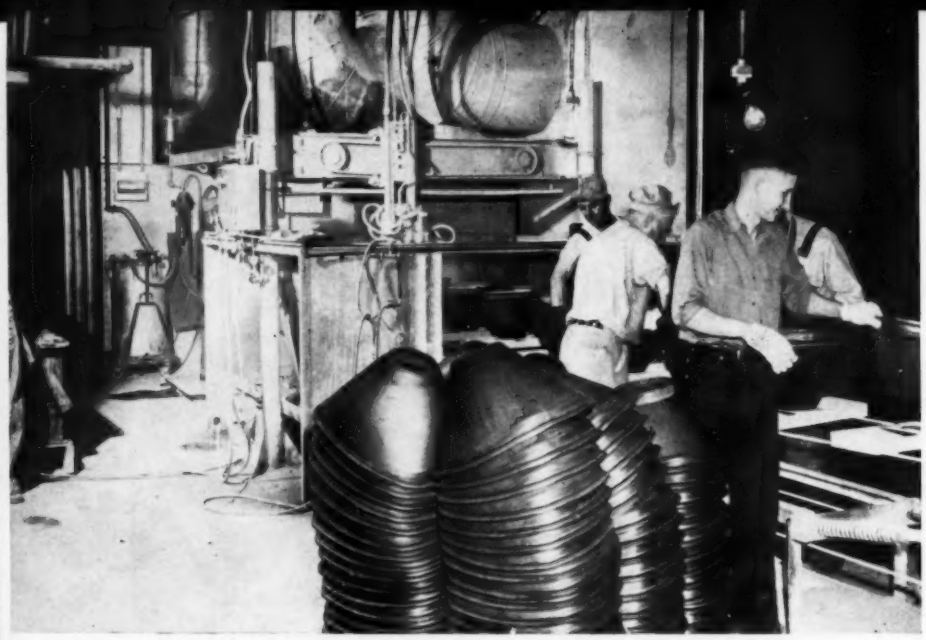
In the August issue an article was presented on fabricating the television cone, including developments leading to the use of the metal cone.

The accompanying brief photo story covers the application of heat-resisting enamel to the cones.

A later article will cover assembly operations, and complete production information on the steel television tube.

The engineers and production men at Ing-Rich solved this double-barrelled problem of high volume and extremely high quality by setting up straight line production with numerous on the line inspection points. Control begins with raw material inspection. Incoming shipments are inspected to see that they meet the proper specifications. In some cases where the product was massed to obtain the volume needed, the quality was retained by extra and unusual processing. One case was in the pickle room where the cones are stacked by nesting in the pickle baskets. It was acknowledged that this made the cleaning more difficult. However, the problem is overcome by careful control of the strength of the pickle solutions and especially as regards the time, temperature, and agitation of solutions. A vigorous scrubbing action is effected in the cleaner by keeping it at a rolling boil,

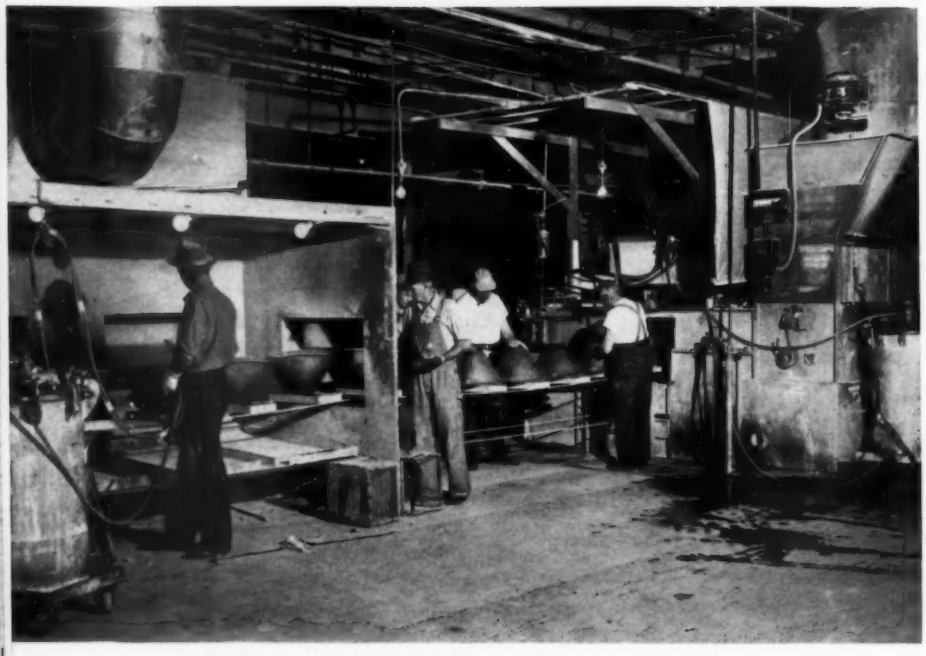
Right: Fitting a dummy face plate to the front of a television cone to check for distortion. Strict inspection is necessary since the glass face that will be fused to the cone must have a perfect fit. Left: A magne gauge is used to check enamel thickness on the sides and ends of a television cone.



Left: Loading pickled cones on automatic spray line. Center man inspecting, cleaning and inserting masks. In left background is hand spray booth for touch-up of cone interiors.

Center: Cones on automatic line. Operations in sequence: touch-up spray (interior); removal of mask disc; cone turned over; deburring butt.

Below: Touch-up of cone exterior in second hand spray booth follows exterior automatic spray. Cones leading into dryer (right).



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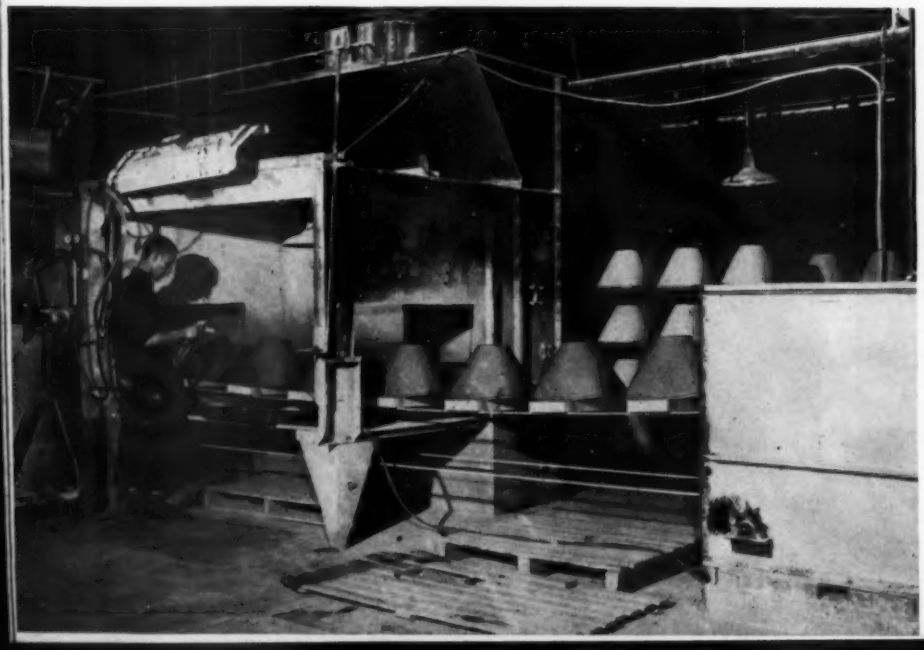


and, as with other tanks, lifting and lowering the basket several times in each solution.

Continuous spray line

The tubes after cleaning are delivered to the receiving end of the horizontal reciprocating automatic spray machine. Here they are inspected, stoned, and freed of burrs or surface imperfections and contaminants. They are loaded onto the conveyor and a round mask is inserted to cover the inside butt flange. (This has been found to be desirable in the subsequent manufacturing operations.) As the cones proceed along the conveyor, they are again inspected. The cones then pass under the first of two sets of automatic spray guns which coat the inner sides of the cone. A hand spray then reinforces the critical areas while the cones are still on the conveyor.

The masks are removed from the cones and they are turned over prior to being sprayed on the exterior by the second set of automatic guns. The cones are once again reinforced on the outside to bring the sealing area of the butt end to the proper thickness. The cones are passed through the dryer of the spray machine and transferred to tables where the rims are brushed free of enamel on the outside.

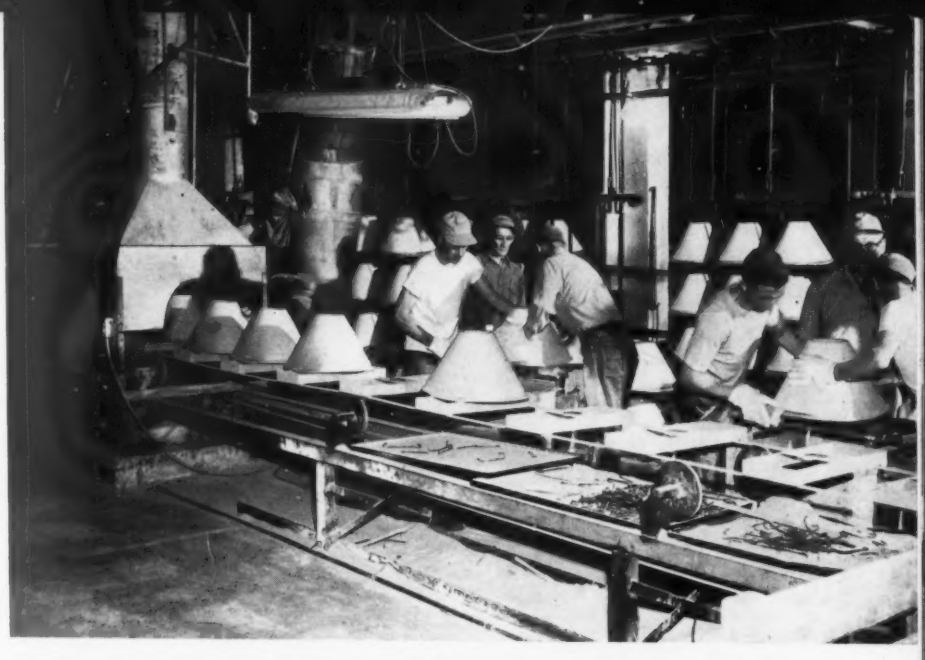
Firing temperature — 1600° F.

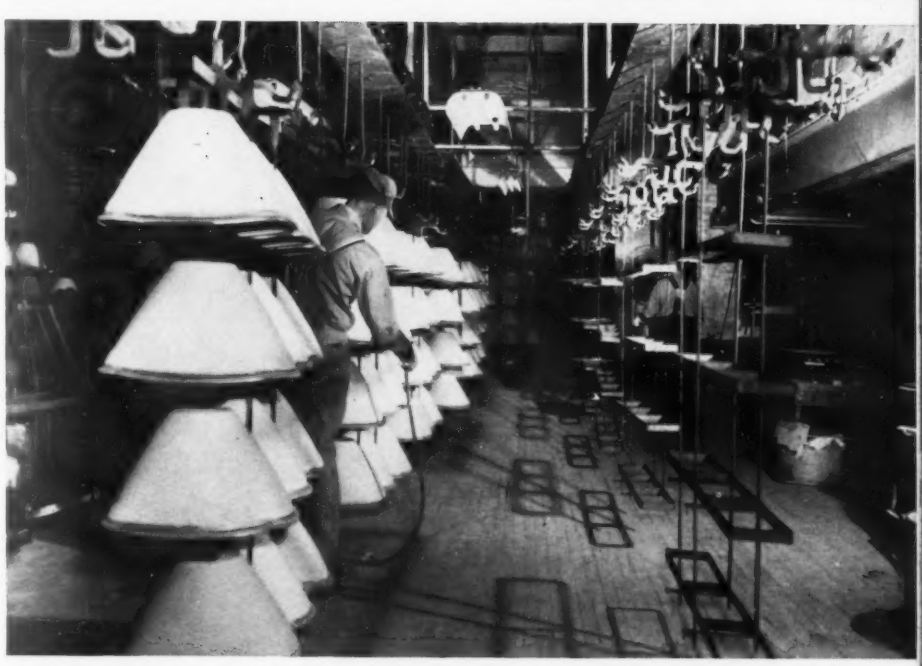
The cones are moved to the con-

Right: Outgoing end of dryer showing rim brushing and transfer to furnace chain shown in background.

Center: Continuous furnace chain, ingoing (left); outgoing (right). Cones are fired 7 to 9 minutes at 1600° F. in the 50-foot U-type furnace.

Below: Pickle room showing pickle basket stacked with TV cones going into acid rinse. Note extreme agitation in cleaner tank.





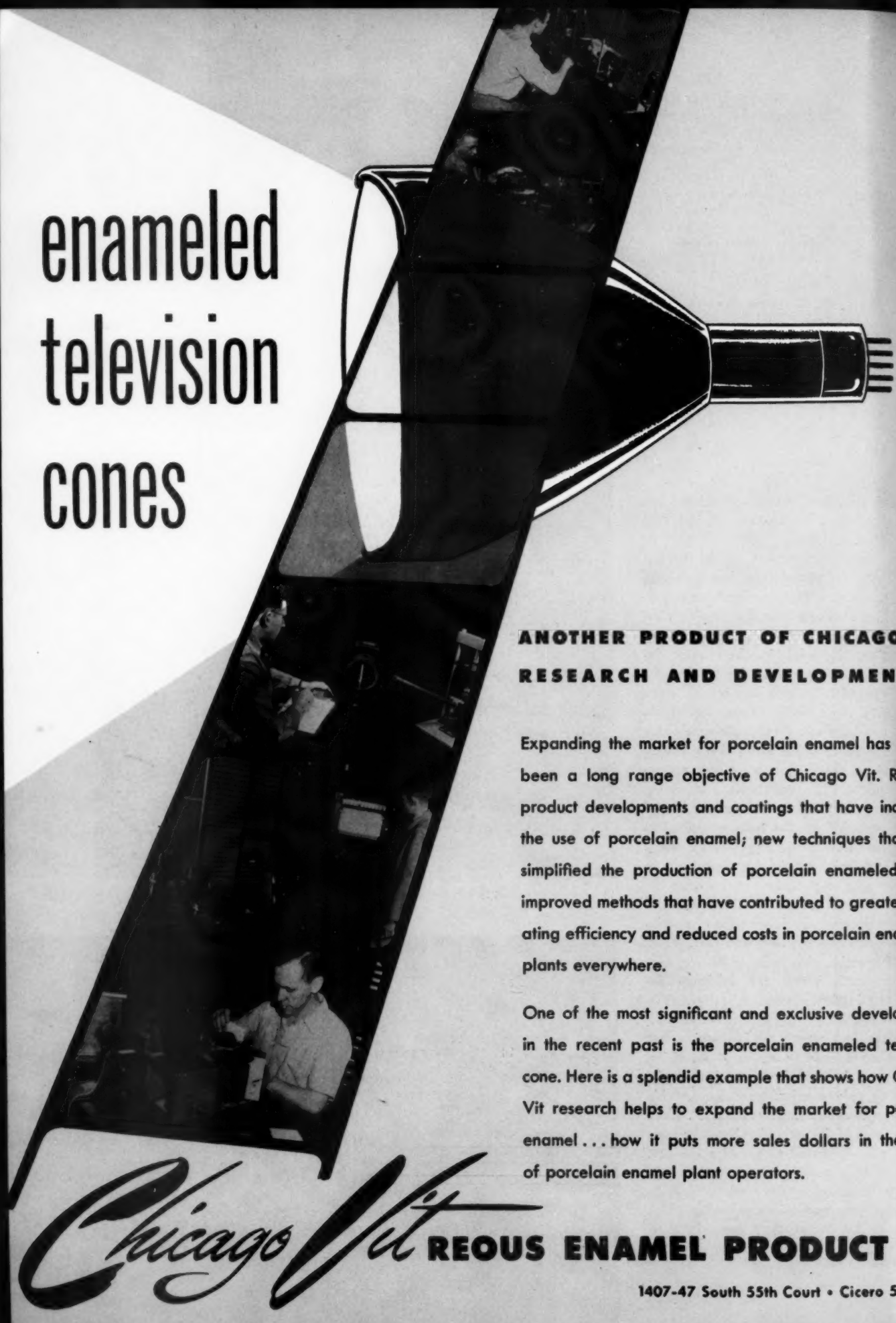
finishfotos

tinuous furnace chain where they are fired at a temperature of 1600° F. for 8 minutes.

The cones coming out of the furnace are placed on a belt type conveyor carrying them past an inspection station where they receive a detailed visual and instrument inspection. Included in the routine inspection are checks for texture, degree of maturity, presence of blisters, pits, scars, scale, lumps, bare spots and burn off. At this time the cones are regaged for metal shape dimensions. Very close tolerances are required. The metal shape on firing may vary only a few thousandths of an inch from the mean specification. This has caused Ing-Rich to design and build special hanging tools to evenly support the cones during the firing. The specifications required at the enamel thickness must be maintained between .004 and .007. Final inspection also includes the use of a magnetic gauge for thickness determination.

A casual tour through the enameling plant creates the impression that the porcelain enameling of television cones is a routine operation requiring only standard procedures. This impression is far from correct. Each phase of the enameling has been carefully developed to produce the best possible quality. From the first step in handling to the trucking back to the tube manufacturer special methods are employed. *to Page ST-18* →

enameled television cones



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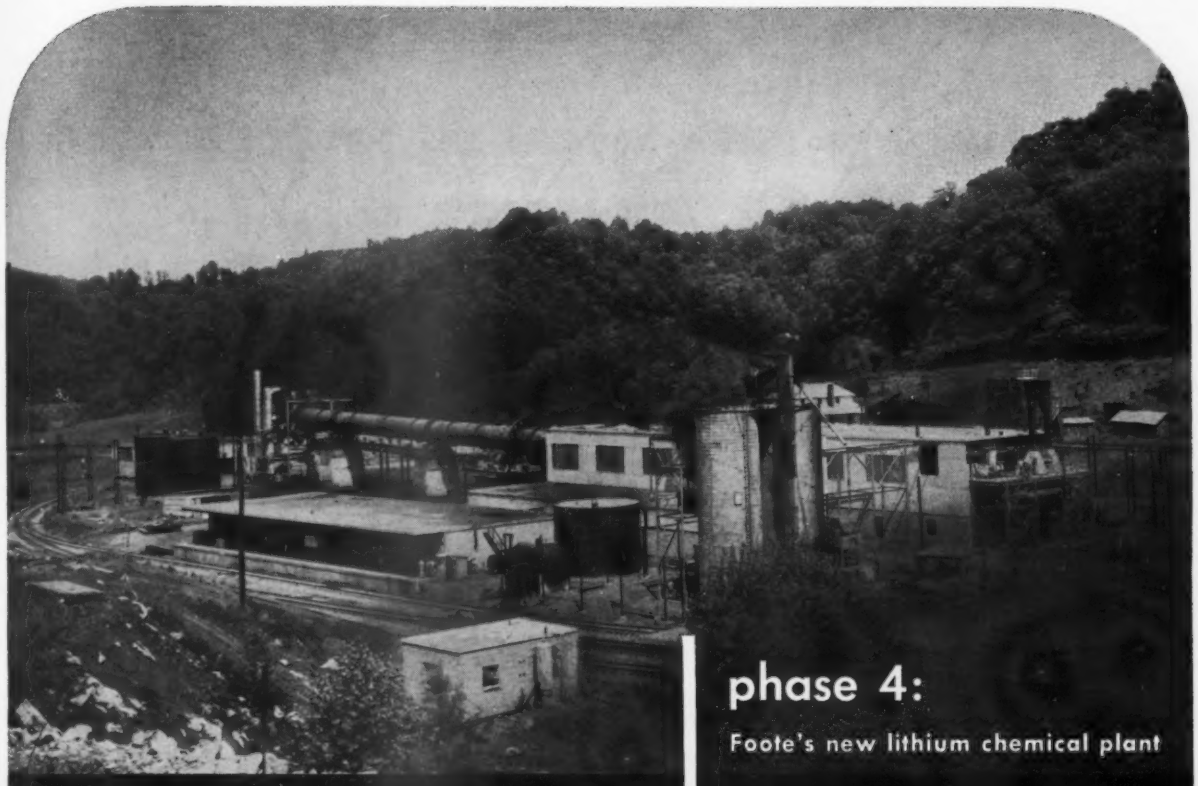

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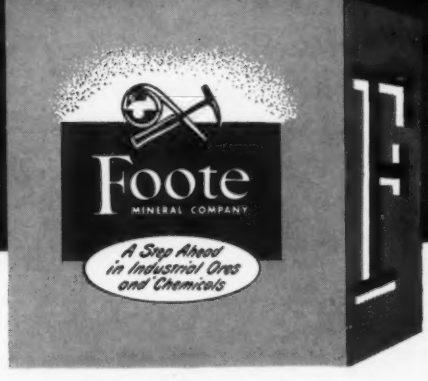

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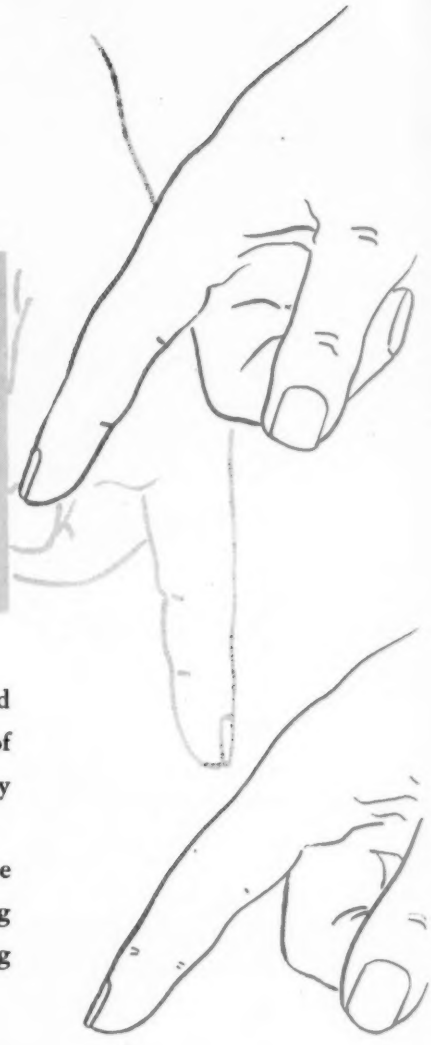

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Not here at Ing-Rich where we both produce the frit and use it in our large job porcelain enameling plant . . . you just can't get away with that pointing finger at Ing-Rich. You have to *prove* your case.

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Here we have a team . . . ceramic engineers in our laboratories . . . production experts in our own large job enameling plant . . . and they just can't afford to kid each other because they have to live together, day in and day out.

You can cut rejects . . . get better enameling results because of this team work . . . when you use

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A tool chest for improving the mechanics of porcelain enamel spraying

a preview of the PEI Forum paper "Spraying Porcelain Enamel — a treatise on the mechanics of applying porcelain enamel to metal by the spray method"

by J. L. McLaughlin • ASSOCIATE TECHNICAL EDITOR; CHAIRMAN, PROCESS DEVELOPMENT COMMITTEE, PORCELAIN ENAMEL INSTITUTE

THE aim of the sub-committee on Spraying Porcelain Enamel has been to present its treatise in numerical values to enable the readers to make quantitative evaluations.

Editor's Note:

One of the highlights of the Porcelain Enamel Institute's 1953 Forum for Plant Men will be the presentation of a digest of a comprehensive study on "Spraying Porcelain Enamel" — "a treatise on the mechanics of applying porcelain enamel to metal by the spray method."

The digest will be presented by J. J. Baker, porcelain process and control supervisor, International Harvester Co., Evansville, Indiana, who is chairman of a sub-committee set up within the PEI Process Development Committee to conduct the investigation. The hundreds of production and engineering tests included in the study were conducted in the plant and laboratories of International Harvester, under the direct supervision of Mr. Baker.

Many simultaneous, coordinated tests were also conducted by the manufacturers of spray finishing equipment and materials.

It is expected that the complete report, which is to be published by the Institute, will prove to be a boon to all those concerned with the production of quality porcelain enamel finishes.

The sub-committee has felt that the benefits which will accrue to the users will more than justify the minor differences which may occur in the various investigators' findings. Any tendency to retreat behind generalities was resisted in order to cover divergent opinions and findings. Efforts in this line have brought some rewarding results. In attempting to be specific, the committee discovered a complete absence of conclusive performance data. It became obvious that data considered essential to the accomplishment of the goal had to be developed. Any collection of data, in turn, required the performance of innumerable tests.

In the process of collecting the data, it became apparent that certain other and previously unreported phenomena were influencing the behavior of the spray equipment. The committee has probed operating characteristics of this equipment in conjunction with the spray equipment companies, both with standard and newly-developed items. The fin-

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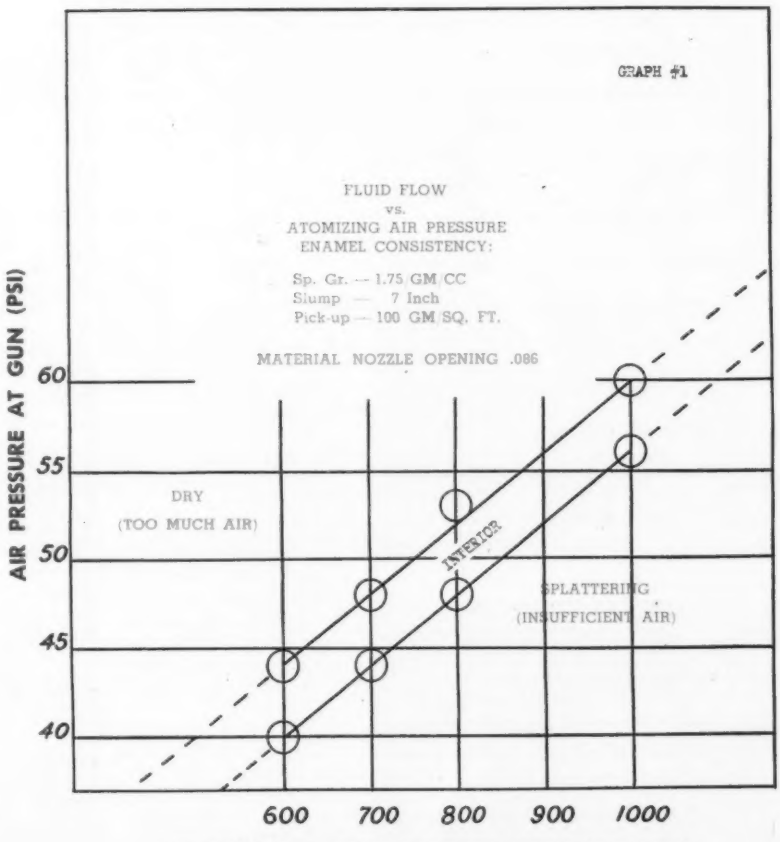
Program for 1953 Forum ⟶

One of several graphs designed to become a "tool" for porcelain enameling.



GRAPH NO. I. RATE OF FLUID FLOW (CC/MIN.)

Program for '53 PEI forum for plant men

annual shop practice forum to be held at The Ohio State University

THE 15th annual Shop Practice Forum of the Porcelain Enamel Institute will be held September 16, 17 and 18, at The Ohio State University, Columbus, Ohio.

ADVANCE PROGRAM

Wednesday Morning, September 16

10:00 **Registration — Archaeological Museum**

10:30 **Meeting of Committees**

Wednesday Afternoon, September 16

Presiding
R. M. King
The Ohio State University

1:30 **Address of Welcome**.....Dean Gordon B. Carson, College of Engineering, The Ohio State University

Response.....W. A. Barrows, Barrows Porcelain Enamel Company; President, Porcelain Enamel Institute

2:00 **WHAT'S NEW IN THE INDUSTRY — Five Minute Reports**

This entire session is devoted to concise prepared-in-advance reports by key enameling representatives on latest industry developments. These presentations are limited to five minutes each, with five minutes discussion to follow each report, and aim to summarize the progress and present status of topics of current interest to the industry.

Enamel Slip Pumping.....George Tuttle, Benjamin Electric Mfg. Co.

Hot Process Screening.....G. R. King, Vitro Mfg. Co.

Measurement Control of White Porcelain Enamels..... Paul Thompson, Clyde Porcelain Steel Division, Whirlpool Corp.

Industrial Applications for Porcelain Enamel.....W. A. Barrows, Barrows Porcelain Enamel Co.

Prepared Neutralizers — A Survey.....J. B. Willis, Pemco Corporation

Gyratory Screening.....Joe Disario, Smoot-Holman Co.

Electrostatic Spraying.....Marcel Pouilly, Illinois Spray and Equipment Co.

Roll Quenched Frit.....(speaker to be selected)

Extending Life of Furnace Tools with High Temperature Coatings.....T. F. Moeller, Ferro Corporation

Chalkboard Enamels.....N. H. Stolte, The Enamel Products Co.

Color Titania-Opacified Porcelain Enamels W. J. Fitzpatrick, Kaiser Metal Products, Inc.

One-Coat Speckled Grey Porcelain Enamels..H. L. Latimer, The Moore Enameling & Mfg. Co.

Thursday Morning, September 17

Presiding
A. L. Friedberg
University of Illinois

9:30 **PRACTICAL TESTS IN THE PORCELAIN ENAMELING INDUSTRY**
(Symposium and Demonstration of Tests)

Test Methods as Aids to Industry Progress.....G. H. Spencer-Strong, Pemco Corporation

Test Methods — Their Demonstration and Use.....*Leader:* G. H. Spencer-Strong, Pemco Corporation

Testing for Adherence.....E. C. Aydelott, Murray Corporation of America

Testing for Resistance to Abrasion.....J. T. Roberts, Crane Company

Torsion Testing.....R. F. Bisbee, Westinghouse Electric Corp.

Testing for Coating Thicknesses..(speaker to be selected)

11:00 **BALL MILL PRACTICES**

Symposium on Ball Mill Grinding...*Leader:* W. H. Duvall, Chicago Vitreous Enamel Product Co.

Milling Practices with High Density Mill Balls — A Survey.....J. B. Vernetti, Frigidaire Division, General Motors Corp.

Relation of Milling Practice To Enamel Workability..R. J. Baker and R. S. Sheldon, Frigidaire Division, General Motors Corp.

Experiences in Use of High Density Mill Balls..... ..... Industry Representatives

Thursday Afternoon, September 17

Presiding
B. J. Sweo
Ferro Corporation

1:30 **ARCHITECTURAL PORCELAIN ENAMEL**

Symposium on Architectural Porcelain Enamel Processing.....*Leader:* Wesley Reynolds, The Erie Enameling Co.

Problems in Obtaining Flat, Smooth Surfaces.....H. W. McMahan, Texlite, Inc.

Factors Involved in Color Control.....Wesley Reynolds, The Erie Enameling Co.

Weather Resistant Matte Finishes.....Paul S. Cecil, Seaporcel Metals, Inc.

3:15 **PORCELAIN ENAMELING WASTES**

Disposal of Pickling Wastes.....L. W. Heise, A. O. Smith Corp.

Disposal of Other Plant Wastes..... .....Max U. Priestor, W. H. & L. D. Betz, Chemical Engineers

Thursday Evening, September 17

6:30 **ANNUAL FORUM BANQUET — at Deshler-Wallick Hotel**

Friday Morning, September 18

Presiding
C. J. Kleinhans
Porcelain Metals Corp. of Louisville

9:30 **PROCESSING METHODS IN THE ENAMELING INDUSTRY**

Process Development by Committee Action..... .....J. L. McLaughlin, Dana Chase Publications

Symposium on Shop Practices..*Leader:* J. L. McLaughlin, Dana Chase Publications

An Investigation into Spraying Methods and Equipment.....J. J. Baker, International Harvester Co.

Enamel Application by Dipping.....Paul S. Cecil, Seaporcel Metals, Inc.

Graining Methods.....J. P. Schloffman, Temco, Inc.

11:15 **SPECIAL TECHNIQUES AND APPLICATIONS**

Special Techniques in Porcelain Enameling.....E. E. Howe, Chicago Vitreous Enamel Product Co.

Flow Coat Application of Porcelain Enamel...F. W. Nelson, A. O. Smith Corp.

Remarks by Chairman.....W. H. Pfeiffer, Frigidaire Division, General Motors Corp.

1:00 **ADJOURNMENT**

Left: Burgess Hurd, Ceramic Color; R. G. Griffin, Prentiss-Wabers; Marcel Pouilly, Illinois Spray & Equipment; and Joe Baker, International Harvester.

Right: Benj. Miller, Indus. Test Lab.; J. J. Gallagher, N.Y. Shipbuilding; E. C. Woodland and Forrest Nagley, Bureau of Ships.

Left: Alex. Pechman, Ryan Aeronautical; W. D. Moran, General Electric.

'52 FORUM

Right: M. H. Pickard, Pacific Coast Borax; John D. Clark, Foote Mineral.

Left: Frank Gibson, Association of American Railroads; Gene Walters, Chicago Vit; Jack Siegel, Guaranteed Porcelain Service.

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Right: George Updike, Pemco; J. A. Schiefferle, General Electric; Wilfred Clay, Kaiser Metal Products.

Left: Lewis Farrow, Clyde Porcelain Steel Div. of Whirlpool; Howard Drake, Coolerator; R. A. Oesterle, Roesch Enamel; Carl Strobach, Cribben & Sexton.

Right: John Ohlhauser, Dwyer Products; Elliott Peterson, Magic Chef; John D. Thompson, Briggs.

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THREE . . . The NU-FLAKE TWINS were made to go together. Individual characteristics of both ground and cover coats complement one another to give you the most economical, practical and attractive Porcelain enamel finish your products ever had. Too, responsibility for both ground and cover coat operations is pinpointed for fast, efficient service.

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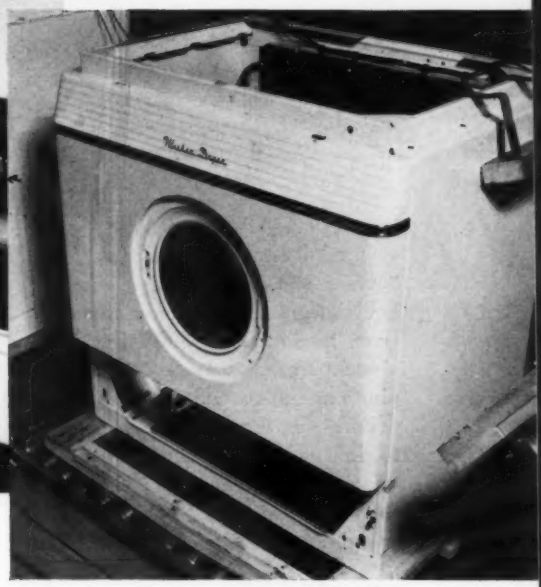
FERRO "NU-FLAKE TWINS"

Left: Twin-type spring steel fasteners, designed for use where fastening applications are grouped in pairs, are used at Bendix to attach service doors to Duomatic washer-dryer combinations. Only two sheet metal screws are now required to make the attachment, replacing a pair each of round-head screws, lockwashers and nuts.

PHOTOS COURTESY TINNERMAN PRODUCTS, INC.

Below: Wire-retaining clip-type fasteners are used to secure internal wiring. Photo shows clip-types assembled to back flange on Duomatic unit.



Using special design fasteners to reduce assembly cost

job-engineered fasteners paying dividends in home laundry production at Bendix

AT Bendix Home Appliances, Division of Avco Mfg. Corp., thousands of ingenious fasteners are used daily in assembling Bendix Duomatic all-in-one washer-dryers, and Economat washers. Various types of job-engineered spring steel fasteners used are paying big dividends in lowering materials costs, decreasing materials handling time, and accelerating production line flow, it is reported.

Since 1937, when Bendix produced the first line of automatic home washers, the company has used especially engineered fasteners in the assembling of its units. The initial success with special fasteners was so great that now they are designed into all Bendix home laundry appliances while still on the drafting boards. The advantages of spring steel fasteners on the assembly line have been utilized by Bendix designers and engineers to achieve cost savings and production efficiencies. One of thousands of the available standard fasteners of this type is employed right at the first stage of assembling Bendix appliances. It is a nut-retaining type which snaps quickly into mounting holes to lock firmly in bolt-receiving position.

Cabinet base locked to shipping crate base

A worker at the first station transfers appliance cabinets to the production line, and assembles four of the

Left: First man on Bendix assembly line snaps four nut-retaining spring steel fasteners by hand into mounting holes at each corner of cabinet base. The fasteners hold nuts in position to receive leveling bolts assembled at the next station.

Right: Here nut-retaining fasteners are being assembled to clothes doors for fast, simplified attachment. This type of fastener makes it easy to incorporate last minute changes that call for door mountings on either side.

nut-retaining types in mounting holes at the corners of the cabinet base. "Mechanical hands" on the fasteners hold integral nuts in position to receive leveling leg bolts. The bolts also secure the bottom of the shipping crate to the unit.

Formerly, three men were required to clinch and weld anchor nuts to the cabinets. Now, one man completes the whole operation in less than ten seconds.

Door assemblies

Nut-retaining spring steel fasteners are also used at Bendix for mounting clothes doors to production units. Snapped into mounting holes on the door, nut-retaining types simplify and accelerate this part of the assembly operation.

Twin-type fasteners are used to assemble service doors to the Duomatic line. Developed especially for fastening applications grouped in pairs, the unique part replaced a pair each of roundhead screws, lockwashers and nuts on each application, permitting three parts to take the place of six.

Mounting "accessories"

"Push-on" type fasteners are used exclusively to assemble name plates, molding strips and dome cover handles. These fasteners are zipped over integral studs and other unthreaded parts.

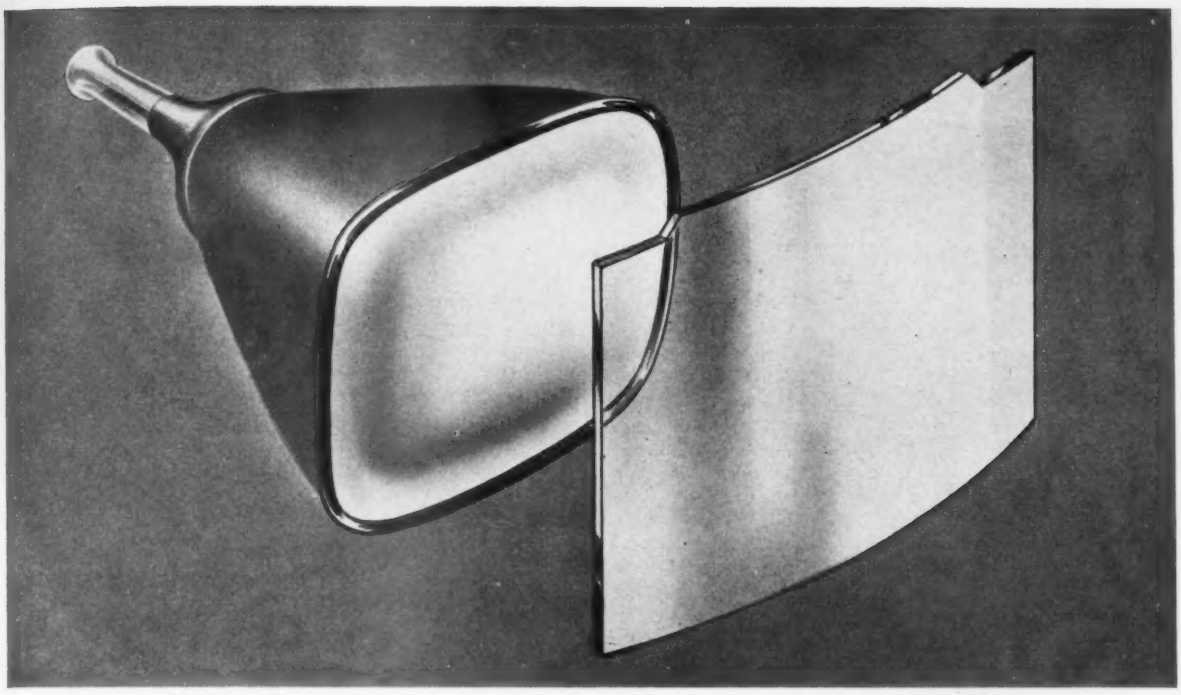
Owing to the speed with which clip-type fasteners can be assembled, just four workers are required to attach all of the stainless steel trim strips to the top panels of Economat washers and keep pace with production. Parallel "fingers" on the fastener are inserted part-way into aligned mounting holes in the strip and panel top, then given a light tap with a hammer.

U-type fasteners are also used at Bendix in attaching dome retainers to dome covers. Pushed by thumb over the edge of the dome retainer flange, these U-type fasteners hold the pieces in screw-receiving position and eliminate riveting, clinching, welding and the use of any other part but a screw to provide a secure attachment.

Bendix uses a vast array of "standard" fasteners, but in many instances special fasteners are designed by the supplier to meet a specific design problem. Then, after plant testing to prove the design production, quantity orders are released.

Left: U-type fasteners are used to attach dome retainer panels to dome covers of Economat washers. Providing for blind attachments, U-types are merely pushed by hand over panel flanges, locking themselves in screw-receiving position.

Right: Applying stainless steel trim to top panels of Economats with self-retaining clip fasteners. Parallel fingers on the fastener are inserted part way into mounting holes in panels and trim strips, then given a light tap with a hammer.



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September • 1953

7TH ANNUAL
SPECIAL SECTION
HOME LAUNDRY EQUIPMENT INDUSTRY

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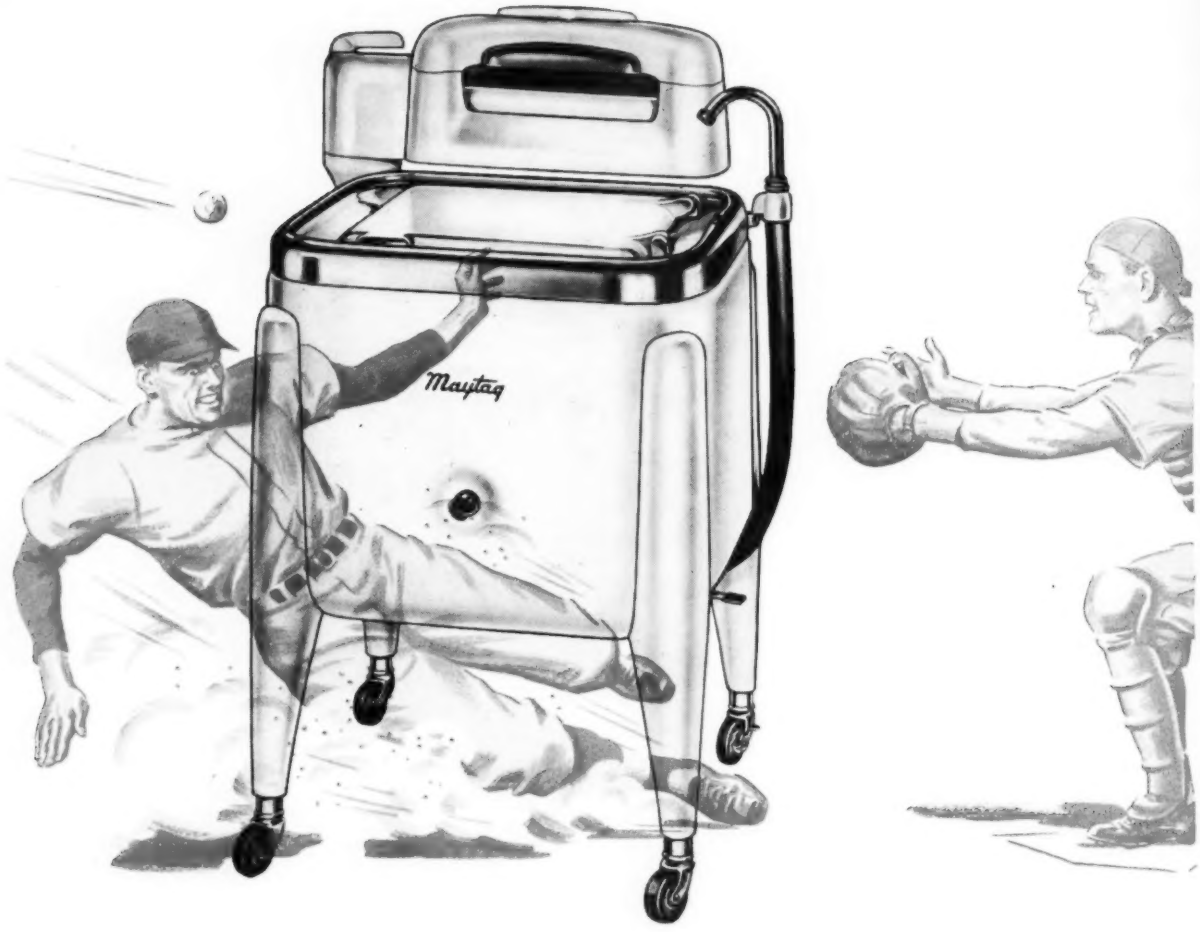
THE MAGAZINE OF
Appliance AND
Metal Products MANUFACTURING

FROM RAW METAL TO FINISHED PRODUCT



Rubber "SQUEEZE PLAY" scores in Maytag Washer

A "pressing" problem existed when the Maytag Company set about designing a wringer for their washing machines. Either the wringer squeezed too hard . . . pressing hundreds of wrinkles *into* the wash, or it gently passed the wash through . . . unwrinkled . . . and sopping wet!

In search of a happy medium, Maytag called in Firestone Techni-Service engineers. The problem was quickly and efficiently solved.

The Maytag wringer employs a standard, hard-rubber roller to provide the pressure necessary to squeeze wash dry. And a roller specially compounded of soft rubber to provide wrinkle-smoothing "give". Happy housewives report that this rubber "squeeze play" has speeded up laundering chores greatly . . . eliminated time-consuming re-wringing completely!

If your organization is faced with an equally vexing problem, why not avail yourself (at no cost to you) of Firestone Techni-Service facilities. Simply clip out and mail the attached coupon.

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HL-2

Home Laundry Equipment Industry Special Section

CONTENTS

A Dynamic Industry Moves Forward

It is with sincere pleasure that the editors of *finish* dedicate this Special Section, the seventh in a yearly series, to the dynamic Home Laundry Equipment Manufacturing Industry.

Although few in number, the manufacturers of home laundry equipment (washers, ironers, dryers) have established themselves as an extremely important segment of the multibillion-dollar Home Appliance Industry or, for that matter, of the entire field of Metal Products Manufacturing. This group of manufacturers is expected to produce in excess of 4,000,000 units during 1953, marking the fourth successive year the 4 million unit mark has been passed. Sales of the industry's products are fast approaching an annual level of $1,000,000,000, which can hardly be classed as "peanuts" even in this age of big business and volume production.

Industry progress literally can be classed as remarkable when it is considered that a comparatively short time ago, as industrial evolution is figured, the hand-powered "washing machine" was considered by the lucky owner to be the last word in labor saving devices for the home. In 1953, the up-to-date washer is as important to the home as is the cooking range or the sink in the kitchen.

Ironers, which have never sold in volume comparable to washing machines, are considered by increasing numbers of homemakers to be a necessary part of the important triad (washer-ironer-dryer) for a "complete home laundry."

The laundry dryer, latest addition to the home laundry group, has shown remarkable progress in development, production and sales, and is considered one of the "hottest" items for the appliance dealer today.

With the advent of the combination washer-dryer, with talk of ultrasonic cleaning, and with continued research and development by the engineers who have perfected today's home laundry equipment, who can predict what the next twenty years may bring for easing the task of "wash day" for the homemaker of tomorrow.

We have no crystal ball, but we will predict that if this important industry continues on its present healthy trend, with individual producers continuing to work together in the common interest of better serving the housewife, progress during the next decade may well surpass the enviable record of the past.

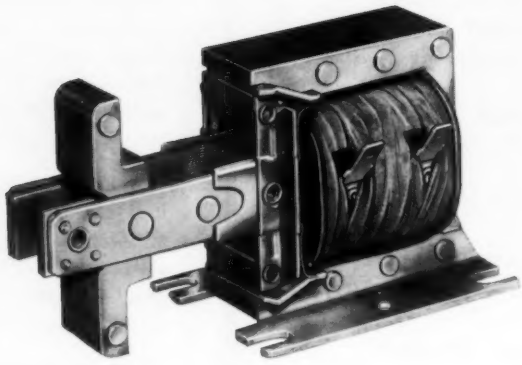
Dana Chase

EDITOR AND PUBLISHER

Home Laundry Equipment Sales — First Half 1953

Factory sales of standard-size household washers, dryers and ironers in the first half of 1953 topped the corresponding period of 1952, according to AHLMA figures.

	1953	*1952*	*Increase*
Washer Sales	1,828,977	1,423,629	28.5%
Dryer Sales	263,201	227,463	15.7%
Ironer Sales	98,981	86,423	14.5%



Solenoids by Soreng—where quality and cost meet to serve the component requirements of the Home Laundry Industry.

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Home laundry equipment industry meeting

mid-summer meeting of American Home Laundry Manufacturers' Association, Grove Park Inn, Asheville, N.C., has record attendance

THE semi-annual AHLMA meeting was held July 26-29 at Grove Park Inn, located in a beautiful setting of the North Carolina hills, overlooking the golf course of the Asheville Country Club, and with the tree-studded city of Asheville as a backdrop.

The 1953 meeting was considered by many to be one of the most successful to date. As traditional sponsors of the midsummer meeting, the Associate Membership went "all out" to make both the formal program and the entertainment features outstanding.

Attendance was so heavy that it overflowed the headquarters Inn to the country club and other nearby hotels. The increasing popularity of the AHLMA summer meeting among the wives of Members and Associates is indicated by the fact that 110 ladies were in attendance.

Formal program confined to morning sessions

T. C. (Terry) Craig, Mullins Manufacturing Corp., chairman of the Associates Committee, opened the Monday morning session with a word of welcome to the representatives of the home laundry manufacturing industry, and the introduction of W. R. Dabney, president of AHLMA. President Dabney outlined the hardships that are being incurred by manufacturers of ironers and dryers as a result of the Excise Tax, and reported on the Association's efforts to clarify the situation.

Wm. Shaw, public relations counsel for the group, gave a preview of the 7th Annual Home Laundry Conference of editors, educators, extension workers and other home economists representing industry, business and the utilities. The 1953 Conference will be held in New York City, November 5-6. Speakers will include technicians from the textile and appliance manufacturing fields, and authorities on related subjects such as soaps and detergents, water softeners and bleaches. Educators and others experienced in teaching the use of household washers, dryers and ironers in schools and colleges and extension services will participate. A feature of the Conference will be a presentation of simple methods by which laundering instruction can be

Right: W. R. Dabney, president of Ironrite, Inc., and president of the American Home Laundry Manufacturers' Association for current year.

Left: Featured speaker on the Monday program was Walter B. Petravage, assistant manager, Department of Education, Chamber of Commerce of the United States.

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Right: T. C. (Terry) Craig, Mullins Mfg. Corp., chairman of AHLMA Associates Committee.

introduced into home economics education courses. The Conference, with a strictly non-commercial program, has as its chairman Roy A. Bradt, vice president, The Maytag Company. Mrs. Julia Kiene, Home Economics Institute, Westinghouse Electric Corporation, is vice chairman.

Walter B. Petravage, assistant manager of the department of education of the Chamber of Commerce of the United States, was the featured speaker for the Monday morning session. He urged the dissemination of accurate information by business management to its employees and business in general to the public as the best insurance for our American economic system. His discussion was clearly illustrated to show the practical effect of well considered educational measures.

G. G. Hardy, B. F. Goodrich Co., chairman of the program committee, presided at the Tuesday morning session to introduce Dr. Don Phillips, president, Hillsdale College, Hillsdale, Michigan, who conducted an extensive demonstration during both Tuesday and Wednesday mornings on the practical application of a program of human relations and his technique for improving conferences and group discussions.

Dr. Phillips' conducted course, titled "Phillips 66," called for audience participation and demonstrated conclusively that excellent results can be obtained through group activity if the chairman has the proper formula. Dr. Phillips explained his methods on Tuesday morning. On Wednesday morning he put them to work. At that time those attending the meeting joined together in small conference groups. Each little group set up a chairman and secretary, then proposed various questions of industry and Association interest, and agreed upon some one question as being of greatest importance. These then were presented to the general chairman of the meeting and the general discussion ensued.

The "Phillips 66" title was no two-word commercial but was founded on the fact that each group consisted of six persons and was given six minutes to arrive at its decision regarding questions. Dr. Phillips formerly was connected with the Adult Edu-

Right: Hal L. Biddle, vice president of Ironrite, Inc., and chairman of a special industry promotion committee presents features of a new book entitled "Plan for All Three."

cation Extension Service of Michigan State College, East Lansing.

Hillbilly party highlights social program

Starting on a high plane, the entertainment for Sunday included a motorcade trip across the mountains to Cherokee, N.C., to view a spectacular pageant "Unto These Hills." The pageant, held in the beautiful open-air theatre, told the story of the Cherokee Indians.

The annual golf tournament was held on Monday afternoon, with a trip to Mount Mitchell for non-golfers. A hillbilly party (with the members in appropriate costumes) combined with a barbecue supper (cooked on spits in an outdoor fireplace), and followed by square dancing to "mountain music", polished off the Monday activity in great style.

. Tuesday's social program returned to the more sedate plane with a fashion show for the ladies, a tour of Biltmore House and Gardens (magnificent mansion completed by George W. Vanderbilt in 1895). Both men and ladies persisted in trying to best the "mountainous" golf courses at Asheville. The banquet Tuesday evening was followed by the awarding of golf prizes, entertainment and dancing.

Back to Mackinac in 1954

A decision was reached at the Asheville meeting to return to Grand Hotel, Mackinac Island, for next year's summer meeting — an ideal retreat from mid-summer heat and the noise and hustle of factories and cities.

This table at AHLMA banquet includes, clockwise: E. C. Buchanan, Apex Electrical; Mrs. Buchanan; A. F. Boone, Mullins Mfg.; Mrs. Boone; J. S. McKenney, Apex; and a young lady guest of AHLMA.

Clockwise: W. E. Dickerson, Randall Graphite Bearings; Judith Dickerson; Mrs. Dickerson; Mrs. Strunk; K. W. Strunk, Randall Graphite.

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Clockwise: Mrs. C. C. Daily; R. A. Lawson, Monarch Aluminum; Mrs. Dana Chase; R. O. Smith, Glidden; C. C. Daily, Firestone, program chairman; Dr. Don Phillips, president of Hillsdale College, and a featured speaker; Mrs. L. O. Reese; R. W. Armstrong, "Electrical Merchandising"; Mrs. Lawson; L. O. Reese, Armstrong Products.

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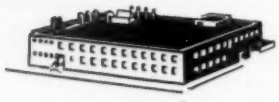

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Babies — best friends of the industry

by W. R. Dabney • PRESIDENT, AMERICAN HOME LAUNDRY MANUFACTURERS' ASSOCIATION; AND PRESIDENT, IRONRITE, INC.

(an editorial brief)

BABIES are the home laundry manufacturer's best friends. Every time an infant is born, the mother becomes a better prospect for our three appliances, and babies are born in this country at the rate of 300 every thirteen seconds.

Today's popularity of casual garb for the entire family also is a prime factor in keeping sales of the industry's appliances at high levels.

Record numbers of second, third and fourth children are being born of post-World War II marriages, despite a decline since 1946 in the marriage rate. Moreover, there are general predictions that births will total at least 4,000,000 annually beginning this year, as compared to 2,500,000 as recently as fifteen years ago.

The wide adoption of washable garb by the whole family exemplifies the age-old argument of which came first, the chicken or the egg. We are not attempting to determine whether it is the convenience of using our appliances in the home which hastened the use of washable garments by mother and father, daughter and son, or whether the wide trend toward comfort and simplicity in clothes for the whole family speeded up the purchase of appropriate equipment with which to keep the home wardrobe presentable. We just know that our production stays at high levels.

I predict that the industry's sales of the three appliances (washers, ironers, dryers) will aggregate 4,200,000 units this year, compared to 3,900,000 in 1952.

Plan for all three

by Hal L. Biddle • CHAIRMAN, AHLMA SALES AND ADVERTISING COMMITTEE; AND VICE PRESIDENT, IRONRITE, INC.

(an editorial brief)

"PLAN for All Three" is the title of a new book designed to aid the housewife in obtaining complete laundering facilities.

The book was prepared under the direction of an industry special promotion committee. It explains the various applications of the household washer, dryer and ironer to the cleanliness problem of the homemaker. In addition, information on how to plan such areas, appealing to the housewife's imagination by suggesting many expedients, shows a large variety of ways by which the appliances can be installed in old or new houses.

One page is devoted to line drawings of the industry's various products, treated as types. There is no identification of appliances by brand or company name as the book has been designed only as a cooperative industry-wide effort to demonstrate that home laundering facilities are incomplete and insufficient without all three appliances, and to prove to the homemaker that finding space for them often is a great deal simpler than she may imagine.

"Teaser" cover for industry promotion committee's new booklet.

In addition to constituting guidance to the housewife, we believe that the book will constitute helpful background material for use by educators and other home economists, editors, extension workers, and home demonstration agents.

AHLMA DIVISION and COMMITTEE CHAIRMEN

Louis C. McAnly, Jr. (Maytag) Market Research Committee.

Frank Breckenridge (Automatic), Conventional Washer Division.

Robert M. Mitchell (Whirlpool) Dryer Division.

Market research—a marketing help

by Louis C. McAnly • CHAIRMAN, AHLMA MARKET RESEARCH COMMITTEE; AND MANAGER OF MARKET RESEARCH, THE MAYTAG COMPANY

ONE of the more easily measured advantages of membership in the American Home Laundry Manufacturers Association is the statistical reporting program. Sales managers, advertising managers and others concerned with marketing home laundry appliances have learned to depend upon this "industry data" for guidance in directing their companies' activities.

Briefly, the mechanics of the statistical program work this way: Members of the association report their individual company figures to an independent public accounting firm. The individual company reports are compiled into an industry total and only this information is reported to the AHLMA office who in turn disseminates the data to the members.

The reporting program is quite complete. "Industry data" is developed on sales by type and price class and by geographical area (613 consumer trading areas) on a monthly basis. Factory and distributor inventories are also reported on a monthly basis. A weekly index of retail sales has been developed and a number of special annual reports cover sales by city size, by type of retail outlet, and by counties in the U. S. Export sales receive special handling and are reported separately. The high participation of the companies in the statistical program makes AHLMA members better informed regarding their industry than in most other industries.

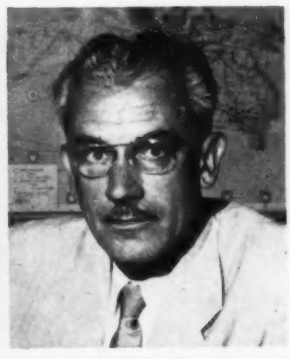
Direction of the statistical program is the responsibility of the market research committee. The market research committee is composed of

John M. Wicht (Blackstone) Government Committee.

J. H. Miller (General Electric) Parts & Service Committee.

E. O. Morton (Westinghouse) Engr. & Research Committee.

S. H. Lewis (Easy), Foreign Trade Committee.



Included are photos available at presstime. Other chairmen include: L. O. Reese (Armstrong Products), Ironer Division; Elisha Gray II (Whirlpool), Automatic Washer Division; J. G. Borson (Hotpoint), Traffic; and Hal L. Biddle (Ironrite), Sales & Advertising Committee. *For a photo of Mr. Biddle in action, turn to Page HL-6.*

We've specialized in stampings for the washing machine industry

THE problem of supplying washing machine tubs has been turned over to us by leading manufacturers time and time again.

We're glad to have the reputation of leadership in the field. And we accept the responsibility. You will find Mullins ready always with the best technical knowledge and equipment. You will find an alert, progressive attitude—an honest belief that the problems of your business are our problems too.

In planning for the future or for the most economical source for current production, consult with us. Mullins has made many notable contributions to the industry's progress and hopes to make many more.

Mullins

MULLINS MANUFACTURING CORPORATION

SALEM, OHIO

Design Engineering Service, Large Pressed Metal Parts, Porcelain Enameled Products

HL-12

market research managers or sales department representatives of member companies. The committee holds at least three meetings per year and directs its activities toward development of new reports and information, improvement of the techniques of handling the reports and encouragement of members to participate in the statistical activities.

The success of the market research committee in its activities, we feel, is a vital part of the overall success of the American Home Laundry Manufacturers Association.

A good future for conventional washers

by Frank Breckenridge • CHAIRMAN, AHLMA CONVENTIONAL WASHER DIVISION; AND PRESIDENT AND GENERAL MANAGER, AUTOMATIC WASHER CO.

THERE will be an increase in sales of conventional washers as we return to a more normal market and free material supply during the balance of 1953.

The conventional washer, by virtue of its high dollar value, offers an opportunity for the homemaker to effect a savings in the household operating budget by providing low cost facilities for handling the family laundry at home with a resultant saving in family clothing costs.

Past experience indicates that in a more normal or tighter national economy, the purchase of a conventional washer is one of the first steps in raising the standard of living in the American home. Due to the economy and labor-saving advantages, it is a household necessity with many young homemakers who are faced with the purchasing of complete home furnishings.

A substantial replacement market for conventional washers exists due to the tremendous improvement in sales and operating features on laundry equipment produced since World War II. Automatic timers, drain pumps, automatic and instinctive controls for wringers and insulated washing compartments are a few of the features that provide the incentive for the housewife to trade in her more obsolete equipment. The alert dealer will be quick to take advantage of the sales promotion plans that will enable him to acquaint his customers with the advantages of early equipment replacement.

There is a trend to expanded advertising and sales promotion programs on the part of the manufacturers where greater emphasis will be placed on the importance of the conventional washer in the home.

Distributors and dealers, in order to take full advantage of the sales promotion plans offered by the manufacturer, will return to more aggressive sales operations by employing competent house to house salesmen. The conventional washer offers a great opportunity for home demonstrations where its many labor-saving features may be fully evaluated by well-trained field salesmen. The dealers will also be quick to appreciate the opportunity to build good will and to create future store traffic through the sale of this product.

Expected annual volume—2 million dryers

by Robert M. Mitchell • CHAIRMAN, AHLMA DRYER DIVISION; AND VICE PRESIDENT, WHIRLPOOL CORPORATION

IT HAS BEEN interesting to watch the development of the automatic clothes dryer. A good deal of this interest can be attributed to the fact that in all of the history of the white goods business, no appliance has caught the consumers' fancy as quickly and as dramatically as this one.

The clothes dryer has a national saturation of only 4%. This 4% saturation is somewhat misleading to the extent that it makes too many of us think of the clothes dryer as a sales product for the future. Actually, it is a product for today's selling and for today's use by the housewife.

In reviewing the industry's dryer sales figures, it is interesting to note that today in the United States we have 12 unusual dryer markets. These 12 markets represent approximately 42 per cent of the national dryer potential. Perhaps the most interesting observation made in these 12 markets is that automatic clothes dryers are selling at a ratio of six dryers to ten automatic washers. In two of the 12 markets, they are selling at a ratio of nine dryers to ten automatic washers, and in one market, with a population of approximately 75,000 people, dryers are out-

G.P.&F. Produces 1,000,000th Ammunition Box

The Sheboygan, Wis., plant of Geuder, Paeschke & Frey Co., recently celebrated the completion of the one-millionth .30-cal. ammunition box it is now producing for the government. Shown in the photo above are, left to right: William Livingston, Assistant Chief of Purchasing, Chicago Ordnance District; Frank T. Frey, G. P. & F Executive Vice-President; Major E. A. Smith, personal representative of Colonel Haskell, Commanding Officer, Chicago Ordnance District; August K. Paeschke, G. P. & F. President; Major R. E. Ryan, Commanding Officer Milwaukee Regional Office, Chicago Ordnance District. G. P. & F.'s Sheboygan branch plant is devoted entirely to military production.

• Whether your requirements are for military use or civilian use—whether you need an ammunition box or a washing machine tub—if it's stamped or drawn, chances are that G. P. & F. can do it for you. When you think of G. P. & F., think of over 1000 skilled people . . . 15 acres of production facilities . . . 293 deep draw and stamping presses . . . 97 welding machines . . . a complete tool and die department.

METAL STAMPINGS FOR EVERY TYPE OF CIVILIAN AND MILITARY USE

Automobile Oil Pan
Hot Dip Lead Coated

Washing Machine Tub
Seamless Drawn—
Vitreous Enameled

Radio Case
U. S. Signal Corps

Base for Power Lawn Mower
Seamless Drawn Steel

Aerial Delivery Container
U. S. Air Force

Deep Fat Fryer Pot
Stainless and Carbon Steel

Scale Platter
Vitreous Enameled

Commercial Fruit Juicer
Stainless Steel

Tub and Cover for Portable Dishwasher
Seamless Drawn Aluminum—
Baked Enamel Finish

G.P.&F.

STAMPING • DRAWING • FORMING
WELDING • SPRAY FINISHING
VITREOUS ENAMELING • FIBER GLASS

GEUDER, PAESCHKE & FREY CO., 1605 W. St. Paul Ave., Milwaukee 1, Wis.

selling automatic washers by a ratio of four to one.

Keeping in mind that since World War II the automatic washer has been, and still is, a terrific sales item, this will give you some idea of the volume of clothes dryers that are being purchased by America's families today.

The automatic clothes dryer is a natural . . . and will ultimately sell almost even with automatic washers. We can safely expect an annual volume of approximately two million dryers in the reasonably near future.

The ironer is coming into its own

by L. O. Reese • *CHAIRMAN, AHLMA IRONER DIVISION, AND PRESIDENT AND GENERAL MANAGER, ARMSTRONG PRODUCTS CORPORATION*

THE ironing machine, which has been cited as a low saturation production, is coming into its own more rapidly every day. It is estimated that ironers have now reached a saturation of approximately 9.2%. The market for highly saturated items is limited and restricted, but low saturation items find as many as nine out of ten homes becoming potential sales.

Major manufacturers of home laundry equipment are promoting the idea to "plan for all three" — the washer, the dryer, and the ironer. There will be special emphasis on planning to include all three in new homes and in connection with remodeling. It is anticipated that during the next several months there will be throughout the country special promotions on all three as a complete home laundry. Successful promotions in the past have been on washers and ironers only, but the theme to "plan for all three" should result in more activity for the three products.

Ironer manufacturers are currently experiencing a substantial increase in sales over 1952. It is the feeling of the industry that sales this year will be between 250,000 to 275,000 ironers, or an increase of from 17% to 25% over the 207,500 reported for the year 1952. For the six months ending June 30, there were approximately 99,000 ironers sold, as compared with 86,000 in the same period of 1952. Substantially greater increases are expected in the last six months of the year.

Automatic washers and a social revolution

by Elisha Gray II • *CHAIRMAN, AHLMA AUTOMATIC WASHER DIVISION, AND PRESIDENT, WHIRLPOOL CORPORATION*

MANY great business product developments had their origin in a change of social habit, or the awakening of the public to a new mode of living. As an illustration, let's consider the emancipation of the housewife in the matter of her laundry. Until almost 1940, the laundry was considered the unmentionable part of the household chores. It connoted the soiled side of home living and women didn't "wash their soiled linen in public" so to speak. It was not fashionable to talk about the laundry problems at her afternoon tea. The subject was not considered a socially acceptable conversation piece. A typical washing machine ad made no effort to suggest that the job was clean and respectable. We stressed rather the efficiency of it, as if to imply that she should lose no time in getting the unpleasant task finished. Commercial laundries used the phrase — "Don't kill your wife. Let us do the dirty work." Everything worked together to connote drudgery.

Then along came the automatic washing machine that handled the whole cycle of washing and rinsing and spinning dry, and this machine not only was mechanically exciting, but it was beautiful to look at as well.

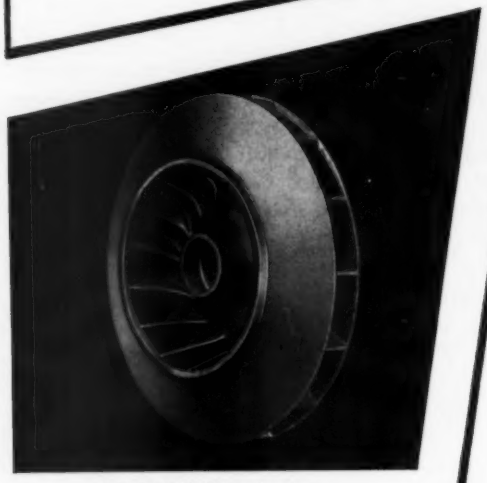
At this point, the architects and builders started putting their pleasing design ideas into the laundry room or utility room as it is coming to be known. The home magazines were in the forefront, portraying handsome model laundries of which any lady could be downright proud. What happened? In less than 5 years (excluding the shutdown war years) another social revolution took place. It became the fad to discuss the home laundry problem at tea or dinner with one's guests. Women gave parties and invited their friends to bring a bundle of soiled clothing to put into this wonderful new work saver. That would have been unthinkable ten years ago. More and more home laundries came out of the basement into a modern, tiled utility room on the first floor, or if that was not pos-

to Page HL-34 →

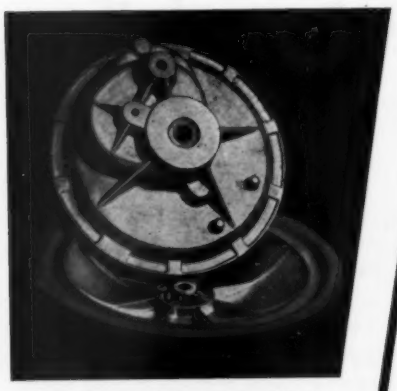
for
ALUMINUM and MAGNESIUM CASTINGS

....depend on

ACME OF CHICAGO



A typical ACME casting for a defense product. Fin sections have a wall thickness of 3/16"



These two castings are machined and assembled as a gear case housing for a peace-time application.

For either defense or peace-time production ACME of Chicago offers a complete casting service including aluminum alloy permanent mold and semi-permanent mold castings and aluminum and magnesium sand castings.

Whether your requirements are for ten or hundreds of thousands of castings of a single design—we are interested in working with you.

We produce light metal castings weighing from a few ounces to hundreds of pounds.

Engineering knowledge and production experience can readily mean the difference between success and failure in using light metal castings.

Over 32 years of engineering and foundry experience are back of ACME service.

ACME of Chicago has a complete engineering service. We will consult with you during the *design* stages of your product. Consultation with experienced engineers at this stage of your planning may save you many headaches and dollars on production jobs.

Your inquiries and requests for information are always welcome.

ACME ALUMINUM FOUNDRY CO.

6837 SOUTH BELL AVENUE • CHICAGO 36, ILLINOIS

HL-16

Is there a

PULLEY

in your

PRODUCT

?

If there is, it will probably pay you to investigate Nagel-Chase as a source for the V-Belt Pulleys. This organization specializes in the manufacture of welded pressed steel pulleys and have been the sole source of supply for many leading manufacturers for many years.

Nagel-Chase pulleys can be supplied with rolled or flanged rims, and are so constructed that the pulley cannot come loose from the hub. They are precision built and will give years of trouble-free service.

Step down pulleys are made in two styles, with the smaller pulley turned into the hub when its diameter is less than 2″, or as an integral part of the large pulley when its diameter exceeds that dimension.

Consult Nagel-Chase on your pulley requirements — you will be repaid in production economies.

NAGEL-CHASE CASTERS—

the Standard of the Appliance Industry

Precision built for long hard service, NAGEL-CHASE Casters are manufactured in styles to suit every mobile appliance, from a television set to a washing machine. Made in a wide range of sizes and styles with from 1⅝″ to 3″ diameter rollers of strong plastic and hard or soft rubber composition, ball bearing or plain, swivel or plain pintles, and with or without the Nagel-Chase patented, foot-operated brake.

Use casters? Consult Nagel-Chase, specialists in casters for the appliance industry.

THE NAGEL • CHASE MANUFACTURING COMPANY
2811 N. Ashland Avenue, Chicago 13, Ill.
SPECIALISTS IN CASTERS AND PULLEYS FOR NEARLY A QUARTER CENTURY!

Mr. Public Relations strikes oil.

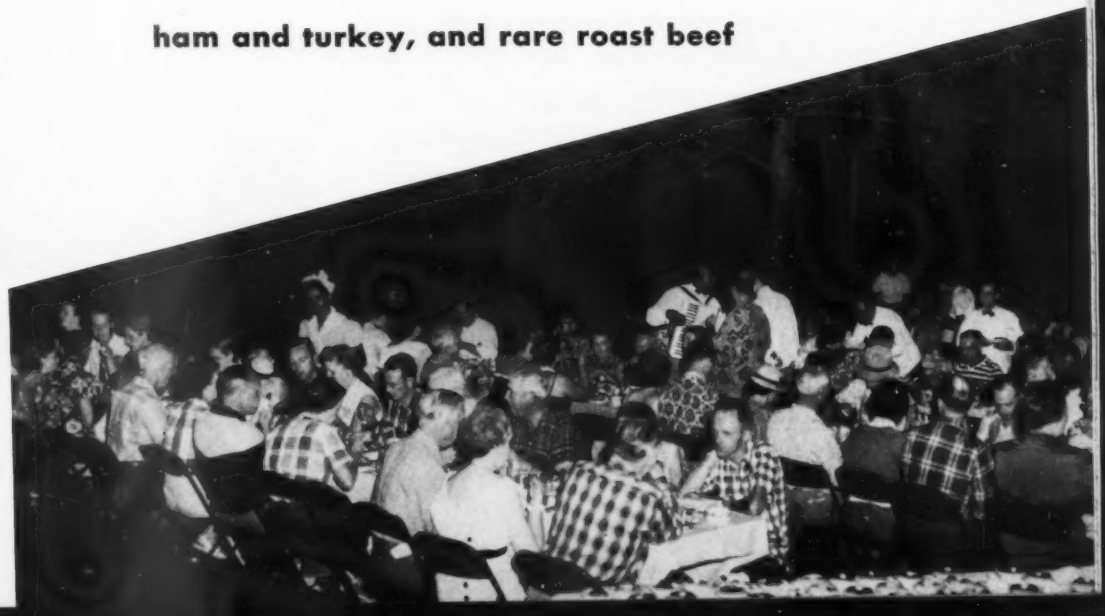
finish attends ill

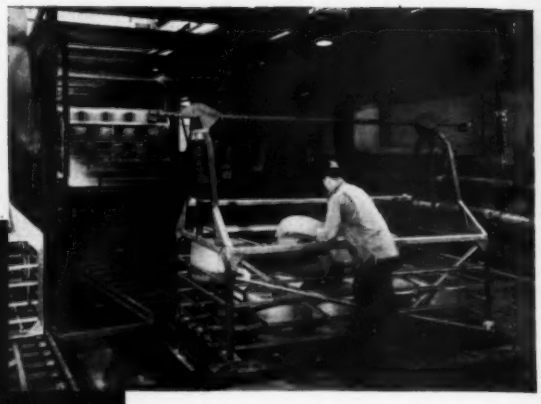
A typical laundry location — mountain style.

illbilly Houseparty

finishfotos

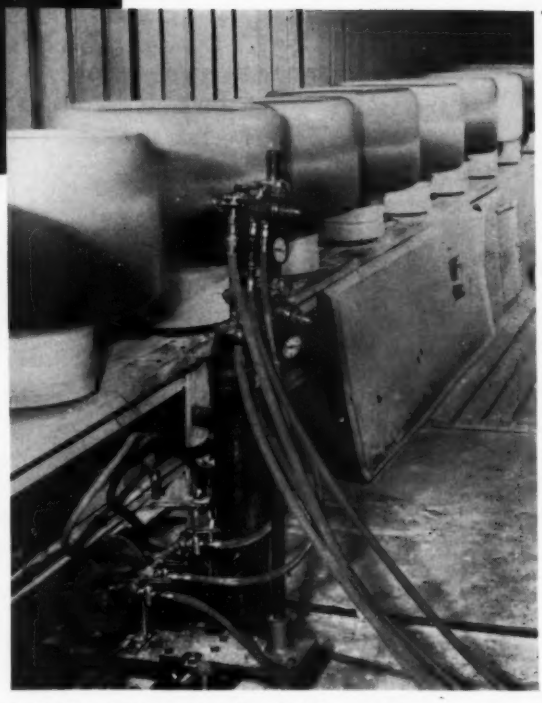
ham and turkey, and rare roast beef





Ingersoll manufactured tubs about to be immersed in pickling tank.

From Start to Finish...



Automatic sprayers assure uniform finish, lower costs.

INGERSOLL "Know-How"

Solves Your Tub Problems

Designing a washer tub is one thing. Engineering it through to mass production is something else again. It calls for specialized knowledge and experience, specialized skill, and specialized equipment to assure large-scale, high quality production at economical cost.

On every count, Ingersoll sets the pace. Our knowledge and experience covers the whole field of tub design and production. Our engineers can tell you if a design is practical, perhaps show you how a slight change may improve the design, cut costs, or both. Ingersoll specialized equipment assures efficient, high quality, on-schedule production at most economical cost.

From start to finish, Ingersoll "know-how" can provide the answers to any tub problems you may have. See for yourself—consult Ingersoll on your next tub design.

ENGINEERING B-W PRODUCTION

INGERSOLL PRODUCTS DIVISION

BORG-WARNER CORPORATION

310 S. Michigan Ave., Chicago 4, Illinois

HL-20

The money-saving Economat Washer, built by Bendix Home Appliances, South Bend. Moyno Pump pulls water, then air, down through passage in agitator shaft. This collapses the tough, flexible tub—*squeezing* clothes damp-dry. Fewer moving parts—yet fully automatic.

Cutaway of small Moyno as used on Bendix Economat Washer. Note progressing cavities (A) that form as molded rotor (B) turns within synthetic rubber stator (C). Capacity of this model: 8½ g.p.m. at 1150 r.p.m.

Pump life increased 650% in Bendix Economat Washer

with the versatile MOYNO Pump!

FACTS ABOUT THE MOYNO

the world's simplest pump!

Versatile—Pumps liquid, pastes, abrasive-laden slurries. Adaptable to heavy industrial machinery or small drink dispensers, oil burners, sprayers, etc.

Positive Displacement—Moynos are available to pull up to 29" of vacuum while discharging under pressure. Big Moynos can deliver up to 250 gallons per minute. Pressures up to 600 psi can be obtained. Pumps in either direction!

Gentle—No churning, foaming; won't break up semi-solids. One Moyno is actually pumping potato salad!

Trouble-Free—Self priming; won't cavitate or vapor-lock. Just one moving part—no valves to stick, no pistons to gum up. Low starting and running torque.

An unusual application of interest to builders of products using pumps.

Bendix Home Appliances' answer for a lower-priced fully automatic washer was *fewer moving parts* . . . a flexible tub to contract and *squeeze* clothes dry. Problem: finding an air-water vacuum pump that would do the job.

Bendix tested several different pumps, but none met specifications. The best averaged only 200 cycles before lint, golf tees, buttons and similar foreign particles caused damage and clogging.

But two years ago a completely different pump was first used in production—the R & M Moyno Pump. Specifications required 27" minimum vacuum for a new pump . . . Moynos pulled 28". Specifications allowed a drop to 26" after 1500 cycles . . . Moynos had virtually no drop. In short, Moynos clearly out-performed the other pumps tested, and lasted seven and a half times longer! *Several Moynos still performed well after 3000 cycles . . . equivalent to 10 years of normal washer operation.*

Service? With Moyno Pumps as standard equipment, pump service calls are practically non-existent. Foreign particles don't cause trouble. Lint passes through the Moyno easily, without clogging.

Moynos may help improve YOUR product!

If you use pumps, find out about the Moyno—the world's simplest pump! Your application needn't involve vacuum; possibly you need *non-pulsating pressure*. Nor must you take a "standard" Moyno. If necessary, the progressing-cavity principle can be *adapted* to your requirements, as it was so successfully to the Bendix Economat Washer.

Get more facts!

Returning the coupon below will bring you an interesting, factual bulletin on the Moyno Pump—and how it works. It costs nothing to find out if this problem-solving pump can help you . . . mail the coupon today!

ROBBINS & MYERS, INC.

SPRINGFIELD 99, OHIO • BRANTFORD, ONTARIO

Fractional & Integral h.p. Motors & Generators | Electric Fans | Electric & Hand Hoists & Cranes | Moyno Pumps | Propellair Industrial Ventilating Equipment

Robbins & Myers, Inc., Pump Division, Springfield 99, O.

Gentlemen: Please mail free copy of Bulletin 30-B containing details on construction and operation of Moyno Pumps.

*Name*_____

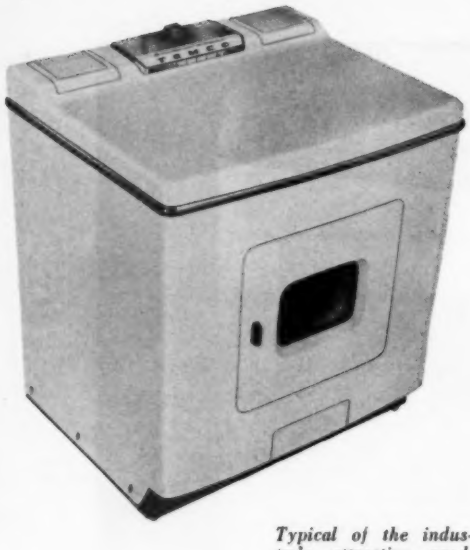
*Title*_____

*Company*_____

*Address*_____

*City*_____ *State*_____ F-93

TYPICAL INDUSTRY PRODUCTS



Typical of the industry's attractive products is this dryer, a product of Temco, Inc.

Hotpoint Compa

BEAM MFG. — "We are installing a whole new phosphatizing system with electrostatic spray painting. . . We are continuing to operate at capacity, and our sales are currently running approximately 50% ahead of last year. We feel that the home laundry equipment business is going to be more competitive, and that, through aggressive engineering design and cost reduction, the sales for the last half of this year should be maintained at a level close to the experience of the first six months of this year" — George P. Castner, general manager.

FRIGIDAIRE — "We have expanded our manufacturing facilities for home laundry equipment in line with wide public demand. We look forward with confidence because we feel that the home laundry field offers sales opportunities comparable with the home refrigerator business of the early 30's" — J. R. Cobb, manager, laundry equipment sales.

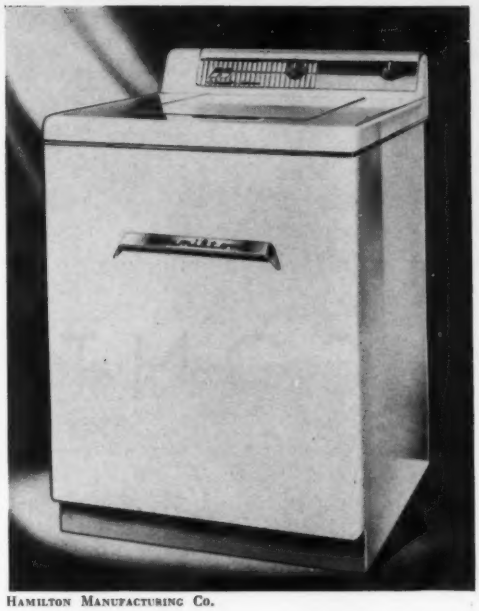
Easy Washing Machine Corp.

One Minute Washer Co.

ARMSTRONG — "Our ironer stand, announced as a new product in January, has enjoyed wide acceptance through the first half of this year, and we find it to be a sales-producing incentive. We expect our sales of ironers for this year to continue at a satisfactory level"—J. Blaine Kelsey, sales department.

FRIGIDAIRE DIV. OF GENERAL MOTORS

WHIRLPOOL — "The home laundry industry is just getting its second wind since World War II . . . however. . . The basic idea of the dryer and the ironer and their work-saving features still has to be sold. In part, this is a job for industry, but we also have our own big job of selling these products and their individual merits" — John M. Crouse, sales manager.



HAMILTON MANUFACTURING CO.

NORGE — "A growing demand for more versatile equipment is the current stimulator in the home laundry equipment field. The housewife . . . wants appliances which can safely wash and dry every type of washable item—especially synthetic fabrics. . . There is good reason to expect developments in textiles to outstrip in the next few years everything accomplished since 1945. Home laundry equipment engineers will continue to keep pace with these developments, thus increasing the labor-saving and time-saving benefits which modern technology offers the homemaker" — V. F. Peterson, sales manager, laundry equipment.

AUTOMATIC WASHER — "Our main plant at Newton has been completely modernized, incorporating conveyors for material handling throughout the multiple story building. The capacity of the plant has been substantially increased by the installation of modern cleaning, phosphatizing and paint baking facilities on the roof of the buildings . . .

"We are continuing to participate in the defense program as substantial contracts are held with Army Ordnance for M13A1 cartridge storage cases which is a part of the 150 mm ammunition program. We are one of the largest producers in the country of this particular item. Our plant rearrangement plans include moving of the defense production line from the main building to Building #12 where the latest type of fabricating and assembly equipment is being installed to give us substantially increased production capacity.

"When these facilities are completed in late August, it is estimated that our plant will have a production capacity so that our total sales may be expanded to approximately 300% of our previous maximum level. Sales for the year 1952 more than doubled 1951, and sales for the first half of 1953 are approximately doubled the same period in 1952" — Frank Breckenridge, president and general manager.

THE MAYTAG COMPANY

ARMSTRONG PRODUCTS CORP.

This is Painting?

Yes, it's the modern way with the RANSBURG NO. 2 PROCESS, an amazing development in electrostatic spray painting.

Spray painting is no longer a hit or miss proposition. It's a science with the Ransburg No. 2 Process. There is NO OVERSPRAY TO BE EXHAUSTED . . . NO COMPRESSED AIR IS USED . . . NO OPERATOR SKILL REQUIRED.

Manufacturers of a variety of products report new efficiencies never before thought possible . . . efficiencies exceeding 99%. With the RANSBURG NO. 2 PROCESS, they are getting increased production, higher quality work, and savings in materials, manpower and money.

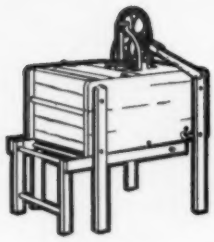
WHO CAN USE IT? Almost anyone who produces painted or coated products. Whatever your product might be, if your production volume justifies conveyorized painting, it's possible that the Ransburg No. 2 Process will do the job better . . . and for a fraction of your present costs.

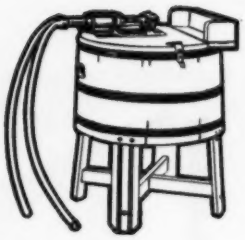
May we send you a copy of our brochure which describes the Ransburg No. 2 Process in detail? It also shows production installations in plants throughout the country.

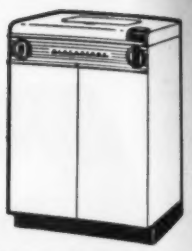
RANSBURG

Ransburg **ELECTRO-COATING CORP.**

INDIANAPOLIS 7, INDIANA







LINE DRAWINGS COURTESY BLACKSTONE CORPORATION

From hand power to complete laundries

WHIRLPOOL CORPORATION

AUTOMATIC WASHER COMPANY

IRONRITE, INC.

BLACKSTONE — "Since the introduction of our automatic washer Model 250, we have been substantially backlogged with orders for this unit, and currently enjoy one of the largest unfilled order files for the model as has ever been our pleasure to encounter.

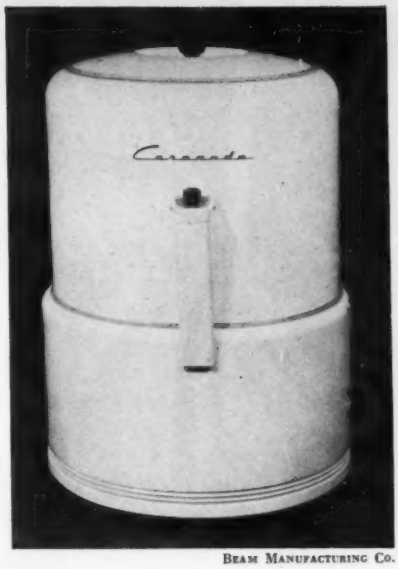
"Our plans for substantially increasing production are under way, and much of the involved expansion has already been accomplished.

"There is no doubt but what the industry has progressed substantially since the pre-World War II period, and figures substantiate the fact that the volume has doubled. The increment of increase has come by way of the automatic washer which has added substantial stimulation to the business. It is also interesting to note that wringer-washer volume maintained its pre-war unit levels.

"Recognizing that the automatic washer is still in its infancy, and in this category we might include the dryer which has risen in popularity since the war, the future for the laundry equipment industry is exceedingly bright" — John M. Wicht, vice president.

THE DEXTER COMPANY

VOSS — "The Midwest Metal Stamping Company, of Kellogg, Iowa, recently purchased the Voss name and selling rights of the Voss washer and repair parts. . . The (new) Voss line of washers will be produced at Kellogg, and the Voss Washer Company will be established as a separate division of Midwest"—Chas. Bassett.



BEAM MANUFACTURING CO.

OR CORPORATION

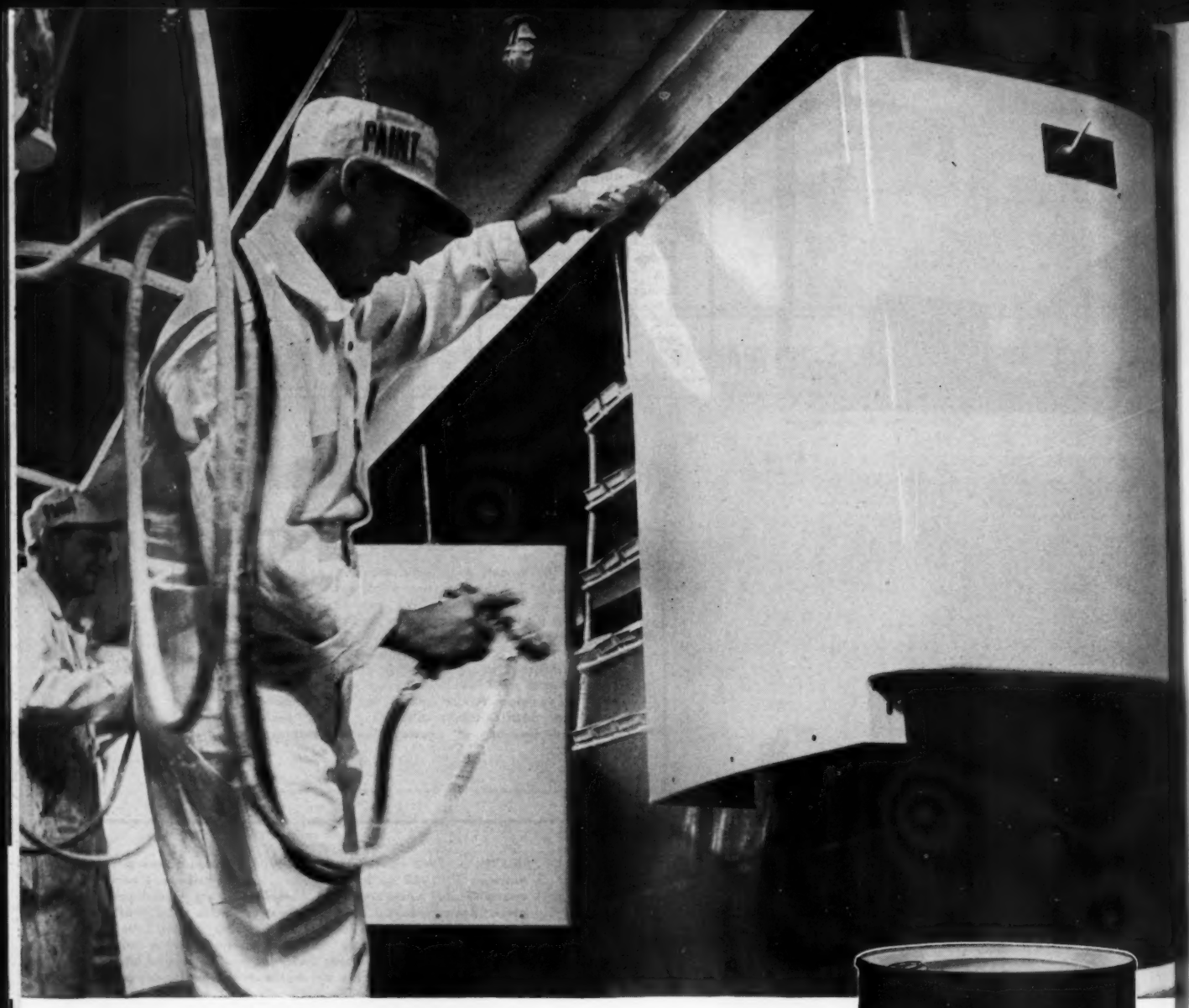
EASY — "Both our automatic washer and new dryer were launched ahead of the peak retail sales season. This allowed ample time for setting-up sound merchandising plans, demonstration facilities and sales development programs by the Easy wholesale organization. In support of the automatic program, we have invested millions in new tooling, plant layout and personnel. Right now we are laying the groundwork for future expansion to be made in well-planned steps toward a $100,000,000 business which includes a broadened line-up of products" — W. Homer Reeve, president.

DEXTER — "We have aggressively used continuous promotions in 1953 to help dealers and distributors merchandise our washers. . . A complete promotional program power-packed with aggressive work and traffic builders has resulted in increased sales at all levels. Dealers and distributors have their choice of a wide range of tested promotions that get prospects and close the sales. This intensive promotional program, coupled with excellent sales training at all merchandising levels, has placed Dexter sales for 1953 above sales in 1952" — Jack E. Schlegel, sales promotion manager.

SPEED QUEEN CORPORATION

HOTPOINT — "Progress in the home laundry industry lies in what kind of a future the industry wants to make for itself. . . The American homemaker is becoming more automatic minded as it affords her more leisure time with her family or social activities. Home laundry equipment manufacturers are well aware of her demand.

"The saturation of dryers and ironers are very low, and both of these products hold great future potential growth" — Lloyd I. Sweetland, manager, home laundry sales.



TEAMWORK TRIUMPH

Glidden and Maytag Team Up to Develop Top Washer Finish

When you link the names, "Maytag-Glidden", the hyphen stands for a lot of things. It's a symbol of the close cooperation that has produced high quality, low cost finishing schedules for Maytag Automatic Washers.

It signifies the teamwork that took place in the formulating, developing and testing of finishes to comply with Maytag's rigid resistance and application requirements.

In meeting these standards, Maytag-Glidden teams came up with a new corrosion resistant primer . . . a cost saving flowcoat application system . . . and hot spray application of White Nubelite for improved product appearance.

Perhaps the joint effort of Glidden and your finishing staff can produce similar production economy and product quality gains.

THE GLIDDEN COMPANY

INDUSTRIAL FINISHES DIVISION

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Explain your business

by Walter B. Petravage • ASSISTANT MANAGER, DEPARTMENT OF EDUCATION, CHAMBER OF COMMERCE OF THE UNITED STATES

(an editorial brief)

DISSEMINATING accurate information about business as it is conducted today in the United States will help to correct much misunderstanding regarding business in particular and the American economic system in general.

Before-and-after surveys among 10,000 employees of seven companies offer proof that a planned economic education program can do much to correct misinformation on business methods.

Asked "do better tools and machines improve living standards?" 60 per cent replied "Yes" when interrogated before the program was staged, and 89 per cent afterward.

How much does the employee get?

Similar betterment of understanding was shown as to the share of income received by employees, the part played by machines in creating new employment opportunities and the role of increased production in improving the standard of living. Studies conducted among high school seniors and farmers reveal a preponderance of views in each case directly opposite to those of business. There is similar divergence of approval for American business practices between groups classified as "poorly informed," or knowing practically nothing about the American economic system, and others rated as "well informed" — "just people with a little information about a few economic principles."

Opinions change when people get the facts. It is important to discuss with your employees the plans, problems, policies, sales and financial picture of your business.

Apex president uses letters effectively

An example of success in building good management-employee relations and developing a better understanding of one's business is the policy of C. G. Frantz, president, Apex Electrical Manufacturing Co., Cleveland, a member of the American Home Laundry Manufacturers' Association, in regularly sending letters to the personnel of his company, pulling no punches, writing both the "bitter and the better."

When layoffs are necessary he tells his employees why. One letter said: "We have already felt the impact of government restrictions by having to cut our production schedules 10 to 20 per cent, with more to come." Mr. Frantz said also that a temporary layoff of some workers was necessary then, and that additional cutbacks had to be faced.

When prospects look better, he tells his employees so. This president who has mastered the art of writing effective letters to employees contends that he has to talk plainly, without gilding the lily or whitewashing. There cannot be a ghost-writer grinding out those letters like sausages, he contends.

A spokesman for the union is convinced, and has said so publicly, that the letters go a long way toward developing better understanding and

Outdoor amphitheatre at Cherokee, N.C., where AHLMA members viewed a spectacular pageant "Unto These Hills", which told the story of the Cherokee Indians. finishfoto

American Home Laundry Manufacturers' Association

PRESIDENT: W. R. Dabney, Ironrite

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TREASURER: Howell G. Evans, Hamilton

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Public Relations and Publicity

William Shaw

*Succeeds the late John R. Hurley, of Thor, who died June 21.

teamwork. One of the employees said that the letters have been a four-year course in business economics for him. Another commented, "It's much better than what you get at the water-cooler." The president of this company has found that on infrequent occasions when letters have been late, employees have come to his office to find out why.

Further evidence of the value of good employer-employee relations is represented by four factories in a southern community. One has a policy of keeping its workers fully informed on "virtually everything connected with the company. An opinion survey conducted among the employees of all four concerns revealed that the cooperative company ranked much higher than the others in the personnel's opinion of management and understanding of the concern's problems.

Functions of the foreign trade committee

by S. H. Lewis • *CHAIRMAN, AHLMA FOREIGN TRADE COMMITTEE; AND MANAGER, EXPORT SALES DEPARTMENT, EASY WASHING MACHINE CORP.*

THE purpose or function of the Foreign Trade Committee is to deal with any and all subjects pertaining to foreign trade that are of general application to Association members. It is not the function of the committee to act in the capacity of a Foreign Sales Manager, or to deal with problems that are not of general interest to the foreign trade of the Association members as a whole.

The committee is unique in that it has a member serving on this committee from each regular member of the Association.

The committee meets on an average of twice annually. These meetings are usually held in connection with such events as the Chicago World Fair; Toronto-Canadian Exposition; or the annual Convention of the National Foreign Trade Council. The reason for such meetings are to enable the committee members to not only attend the committee meeting, but also to attend the activities in conjunction with such large meetings of export groups as have been referred to above.

The committee has been successful in performing its purpose or function, and those who have been active in the committee work will confirm that the accomplishments of this committee have been such as to help broaden the understanding and the possibilities afforded in this field.

make

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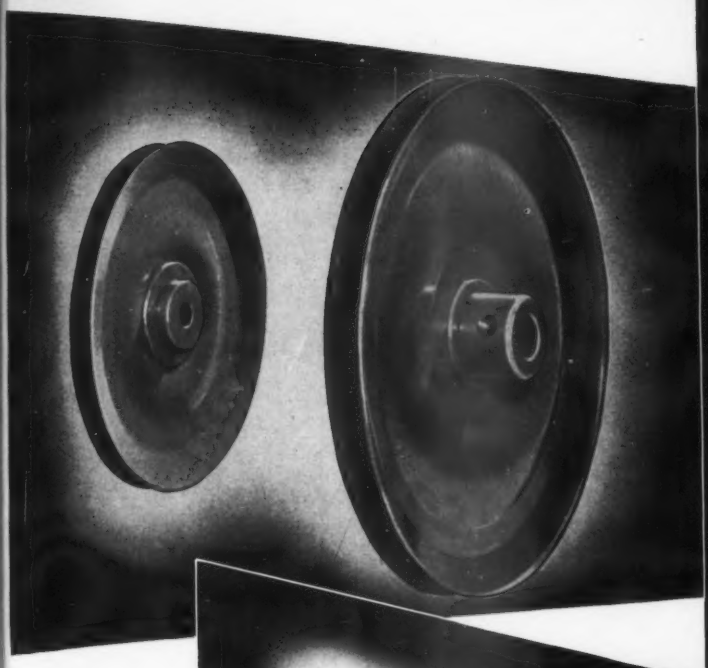


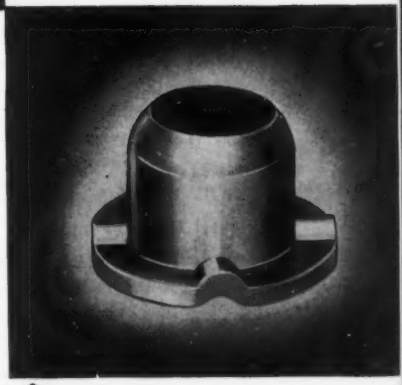
Two of the various types and styles of pulleys produced by Danielson. For production economies, Danielson stamped, spot welded pulleys can't be beat.

CASTER SOCKETS AND BRACKETS ...OUR SPECIALTY...

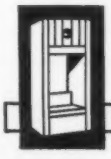
Here are a few of the types of caster sockets and brackets manufactured by Danielson. All are produced with extreme economy to exact specifications. Let us figure on your needs.

Our plant is specially geared for this type of work where high production and low cost are a prime factor . . . . . and yet quality and precision workmanship are always our goal.

Our Press Department is equipped with presses ranging from 5 ton to 300 ton capacity, and specializing in deep draw work for Appliance and other Metal Products Manufacturers. Other services include: Shearing — Circle Shear — Spot Welding — Arc Welding — Silver Soldering — Hydrogen Brazing — Polishing — Degreasing — Painting — Assembly — and our complete Tool and Die Department will furnish precision tooling for your own fabricating department.



Danielson stamped WELD NUTS for use on automatic washing machines, dryers, refrigerators and other similar products requiring leveling at point of installation.
Danielson WELD NUTS made in a multi-sequence stamping process are equal in durability and strength to any machined weld nut but cost less.



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Automatic washers . . .
→ *from Page HL-15*
sible, the basement room was refurnished to be presentable to visitors who were frequently taken on an inspection tour.

In analyzing the rapid public acceptance of the automatic washer, we must give full cognizance to this change of social habits. In any event, the revolution is on in full flower. The social taboos are gone and the housewife is proud of her automatic washer, and her appetite for more gracious living sets the stage for the ascendency of the automatic washer business.

Research and engineering

by E. O. Morton • *CHAIRMAN, AHLMA ENGINEERING AND RESEARCH COMMITTEE; WESTINGHOUSE ELECTRIC CORPORATION*

THIS committee handles technical problems of general interest to the industry.

Since the annual winter meeting, two meetings have been held to work out details for completing the assignment at the National Sanitation Foundation. NSF will prepare a manual on the procedure for using radioisotopes in washability tests, and proper methods of handling the radioactive material. The use of this method is up to the individual members as to whether they wish to buy equipment and set up their laboratories. Members of the American Home Laundry Manufacturers' Association may send personnel to the National Sanitation Foundation in small groups of four or five for detailed instruction.

Last year this committee persuaded Underwriters Laboratories to set up an Industry Conference Committee to aid in working up new standards for washers. They have had no meetings to date but it is understood that UL has completed the first draft which will soon be submitted to the committee.

After-the-sale service is important

by J. H. Miller • *CHAIRMAN, AHLMA PARTS AND SERVICE COMMITTEE; AND, MANAGER, PRODUCT SERVICE, MAJOR APPLIANCE DIVISION, GENERAL ELECTRIC COMPANY*

THERE is an increasing recognition by members of the American Home Laundry Manufacturers' Association that they are selling more than appliances — that they are really selling the labor-saving convenience and satisfaction which their products are designed to give. Consequently, there is an increasing recognition of the important role that "after the sale" service plays in our industry.

The parts and Service Committee of AHLMA has planned an active season for the remainder of 1953.

Our program includes presentations by, and discussions with, representatives of the National Appliance and Radio-TV Dealers' Association and the Appliance Parts Jobbers' Association so that we may be able to study our industry from the viewpoints of the dealer and the parts jobber, and attempt to determine how, together, we can make the greatest contribution toward better service on Home Laundry equipment.

Our agenda also includes a presentation on plumbing codes, their trends and their relation to the installation and servicing of automatic washers. This is to be delivered by a nationally recognized authority on this subject.

7TH NATIONAL HOME LAUNDRY CONFERENCE

The 7th National Home Laundry Conference, sponsored by the American Home Laundry Manufacturers' Association, will be conducted again in New York City, November 5-6.

A feature of the forthcoming Conference will be a presentation of simple methods by which laundering instruction can be introduced into home economics courses.

Now... a foolproof, low-cost timer for washing machines and dryers!

Available with 1 to 4 single-throw switches
Range: 30 - 60 - 120 and 180 minutes

Approved by Underwriters' Laboratories
for 25 amps, 230 volts, ½ h.p. - A.C.

For the full story on this foolproof, low-cost timer get in touch with LUX today!

Look for the "MINUTE MINDER MAN" tag—it dramatizes the famous Lux Timer line found on America's finest appliances

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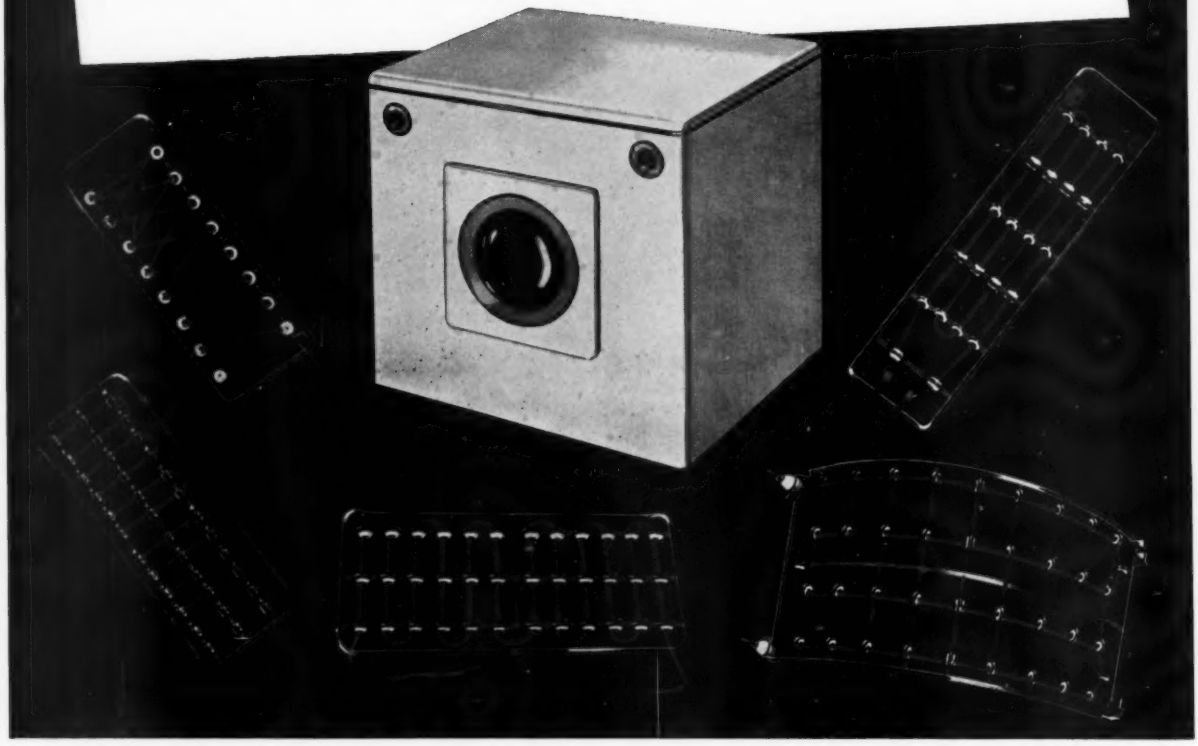
YOUR TIME-REMINDER LINE

THE LUX CLOCK MANUFACTURING COMPANY • WATERBURY 20, CONNECTICUT

WHICH ONE

dries clothes faster?



Obviously the answer is the one heating unit designed specifically for your particular dryer. For heating elements, like bathing suits, must be designed to fit the subject.

But speedy drying isn't your only problem in electrical heating elements. Your dryer needs a sturdy, economical unit that can be quickly installed, that gives maximum drying efficiency with long-life durability. Which is exactly what you get with dependable Ferro heating elements.

For example, only top-grade Nichrome* resistance wire and steatite insulators go into Ferro heating units. The frame is pierced with each crossbar crimped solidly in position. Welding is minimized. And thanks to Ferro's exclusive "floating" construction, Ferro units can expand and contract for thousands of heat cycles without distortion.

Ferro engineers are experts on heat patterns, heat losses and good heating design. They can save you hours of experimental expense and needless board work on wattages, controls and mountings.

Today, Ferro makes more electric units for clothes dryers than the rest of the industry combined. You may want to remember this, and the reasons for it, when you think about heating units for equipment of any kind.

*Reg. T. M. D. H. Co.

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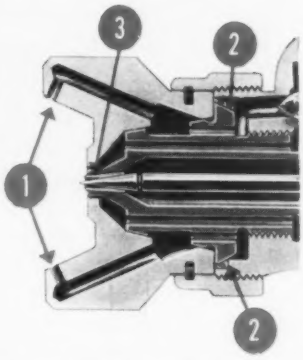
KIRKLAND, ILLINOIS

A better nozzle for ceramics



Only Binks new Ceramic Nozzles offer all these advantages!

After months of research in the laboratory and the field, Binks offers you a new and different nozzle for applying ceramic finishes. The new nozzle achieves better atomization through a sharp reduction in the number of air orifices, a complete rearrangement of orifice locations and a marked increase in orifice diameters. This new design:

1 Doesn't plug or fog. Binks new Ceramic Nozzle frees you from those annoying delays caused by plugging of the air orifices. In normal production spraying, Binks new Ceramic Nozzle will spray a full shift continuously, giving a completely atomized and controlled pattern.

2 Saves air. This one-piece nozzle, machined from solid brass, uses precision ground surfaces to form and maintain a perfect air seal. There is no soldering and the nozzle does not depend on a retainer ring for an air seal.

3 Prevents wear. Special tungsten carbide inserts in the material nozzle and in the needle valve provide 8 to 10 times greater life than alloy steels. These inserts will not break due to brittleness.

4 Saves material. Previously, multiple passes were often needed to get required film thickness. Binks new nozzle will do the job in one pass. Properly used, the nozzle can mean up to 20% savings in material.

5 Operates at low pressure. This nozzle produces perfectly atomized pattern with air pressure as low as 25 pounds at the nozzle.

6 Saves time, reduces fatigue. Since only one pass is needed, it takes less time to finish your products. Reduction of fatigue boosts production, eliminates rejects.

7 Saves money—simple kit converts present equipment. You don't need to buy new spray guns! Binks new Ceramic Nozzle fits either the Binks Model 18V or 19V Spray Finishing Guns. If you are presently using these guns, all you do is change nozzles.

Specifications. 63 CVT x 66 PH (0.052" orifice); 64 VT x 64 PA (0.064" orifice), 67 VT x 67 PD (0.086" orifice).

MAIL COUPON for information on NEW Nozzle!

Binks

Binks Mfg. Co.
3122-40 Carroll Ave.
Chicago 12, Ill.

☐ Please have your Ceramic Engineering Department rush me full data, including prices, about your new nozzles for Ceramic Spraying.

☐ Send me class dates and other information about your school.

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Ask about our school. Provides training in best finishing methods. No charge for tuition. Write Binks for class dates.

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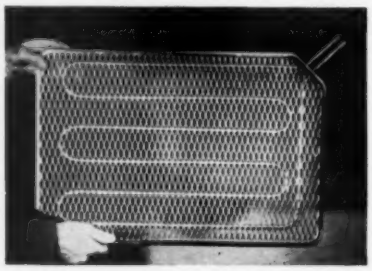
New Supplies and Equipment

I-10. New type freezing shelf for upright food freezers

New A revolutionary type of freezing shelf for upright home and commercial food freezers is a unique combination of tubing



brazed to expanded metal. It is available in production quantities in almost any size, and with any type of fitting.

The new shelf differs from conventional solid shelves in that it permits the free flow of air over and around all freezing surfaces. The new design is said to result in higher heat transfer at lower operating costs.

In addition to high operating efficiency, the shelf's simplified design eliminates costly, complicated tooling and manufacturing procedures.

More Information

For more information on new supplies, equipment and literature reviewed here, fill out the order form, or write to us on your company stationery.

J-12. Small motor reversing switch for washing machines, room coolers, power tools, etc.

New Development of a small new motor reversing switch of compact design, and featuring one of the fastest and simplest connection methods devised, has been announced.

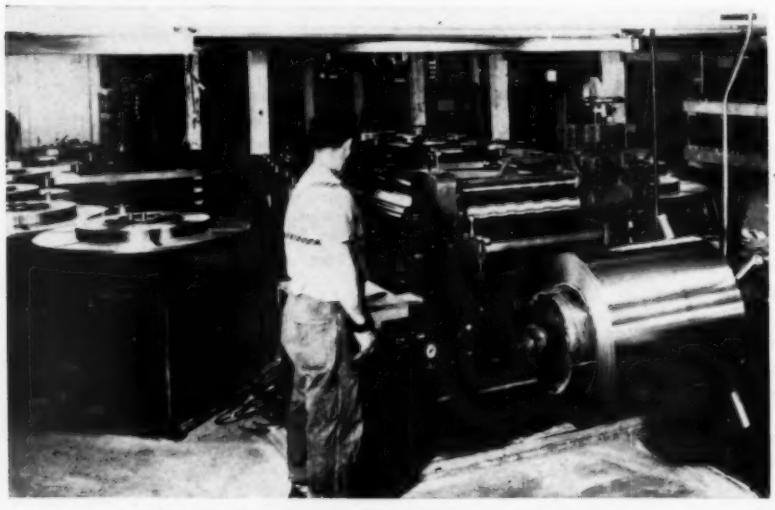
A two-pole motor reversing switch with ratings of 1 hp at 120 v, 2 hp at 240 v, ac, this new switch is designed for washing machines and other appliances, air conditioners, power tools and similar applications involving a single-phase motor whose direction must be reversed.

The switch measures only 1 21/32" x 1 27/32" x 1 7/32", and is available with or without housing, and with lever, pointer dial or other type handles.

"Auto-lock" connections provide instant, positive hook-up by simply pushing the stripped end of standard wire (solid or stranded) into the connection. Depressing a small lever gives instant release.

I-11. Twenty-five-inch slitter for light gauge metals

New This new 25-inch precision slitter is especially designed for light gauge metals. It has a unique rewinding arrangement to assure better coils and edges; each slit strip has its individual take-up and tension controller.



I-13. Retaining spring designed to fasten appliance name plates

New A new specially-designed retaining spring developed for home appliance manufacturers is used to hold plastic name plates se-

curely in place. The fastener is easily installed by pressing it into position between two plastic studs, using only the fingers. As the spring is pressed into position, the toothed end legs bend inward, affording easy passage.

Once the spring is in position, the teeth on the legs bite into the plastic studs effecting a positive lock. Vibration or pressure against the name plate will make the teeth bite deeper into the studs and lock tighter.

I-14. Combination rotary drum, flat belt metal washing machine

New A new combination rotary drum and flat belt metal washing machine is designed to remove drawing compounds, cutting oils, grease, and shop dirt from metal parts. Small parts that can be tum-

bled are washed, rinsed, and dried in the drum, while larger parts are processed on the conveyor.

I-15. Chromoveil decorative finish for porcelain enamel

New A new technical bulletin presents information on Chromoveil, a new decorative finish for porcelain enamel. Its effect is a

pattern of color in a network of lines over light or dark backgrounds. To achieve this tracery, Chromoveil (color in a special medium) is sprayed on through the veiling head attachments of regular spray gun equipment. The color is forced out in threads rather than a mist.

Suggested uses for Chromoveil include oven liners, washer tubs, counter tops, architectural panels, wall tiles, sanitaryware, and large kitchen utensils.

I-16. Heavy duty electrolytic cleaner prior to plating

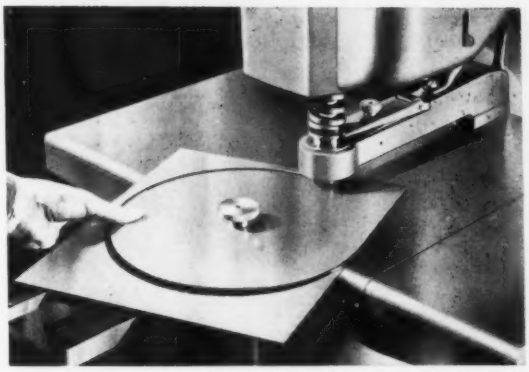
New This cleaner is reported to thoroughly remove stubborn and heavy deposits of organic and inert foreign matter from ferrous metals preparatory to plating. It may be used with either direct or reverse current. It is said to have exceptionally high conductivity qualities and long life. It is shipped in dry powder form, and sold by the hundred weight.

I-17. Newly designed welders

New Now available are 300 to 500 amp ac welders with the following advanced features: fast range-changing with a new switch — no leads to unplug, no connections to make; power saving — primary switch permits turning off current at the welder between welds; case stays cool — large fan forces adequate ventilation to all parts. The welders are housed in handsome new cases.

I-18. Sheet fabricator with quick change for punching, nibbling

New This new sheet metal fabricator, which punches, notches and nibbles, operates with a minimum of vibration and noise at 165 strokes per minute for single hole punching and nibbling. It features rapid interchangeability for punching, notching and nibbling.



Operators work directly from blue prints or operation sheets, without requiring templates. One holder, which incorporates a "quick change" system, permits 10-second change of punches and dies for punching various round and shaped holes up to 1 1/4" in diameter. Another holder provides for punching various holes up to 3 1/2" in diameter, and only requires the interchanging of three parts — punch tip, stripping plate and die.

Adjustable back and side gauges on both 1 1/4" and 3 1/2" holders provide accurate hole locations. Simplicity of this design permits changeovers to be made in a matter of seconds.

By simply placing an independent, self-contained notching unit on the fabricator bed table, notching operations are immediately performed without any ram adjustments.

All types of nibbling are made possible with the fabricator. A nibble lever controls the non-repeat device for continuous, uninterrupted ram operation while nibbling.

Photo *above* shows circle nibbling device equipped for pivoting from center hole in the work.

I-19. Quick-drying thermal insulating material for metals

New A new quick-drying material, that can be sprayed like paint on metal, makes the treated surface capable of withstanding temperature as high as 5000° F. Called "Pyrolock", a 1/16" coating of the new insulation protects metal for as long as 10 seconds against flame temperatures hotter than the melting point of metals.

The material is described as a "water base inorganic material unique in the field of thermal insulation." It is nontoxic, non-flammable, non-explosive, and will adhere directly to clean surfaces without sandblasting or use of priming surface preparations.

In the test shown, the untreated steel panel at right burned through in less than a second under an oxy-

As Appliance and Metal Produc

finish

The *Only* trade magazine offering a *Complete* editorial service to the appliance and metal products manufacturing field.

1. *finish* moves forward in Circulation

Circulation growth has been constant over the period of publication with a total increase from January 1944 to June 1953 of 109%. *finish* offers blanket circulation, increasing immediately with industry expansion.

2. *finish* moves forward in Editorial Service

As *finish* has grown new editorial services have been added, providing, since January 1949, a *complete* editorial service "from raw metal to finished product."

3. *finish* moves forward in Advertising Revenue

1953 shows a continuation (at an accelerated pace) of the year after year steady growth of advertising revenue. Advertising has been sold almost entirely on the strength of Editorial Content.

First advertising selection of the leading suppliers to the multi-billion dollar appliance and metal products manufacturing field.

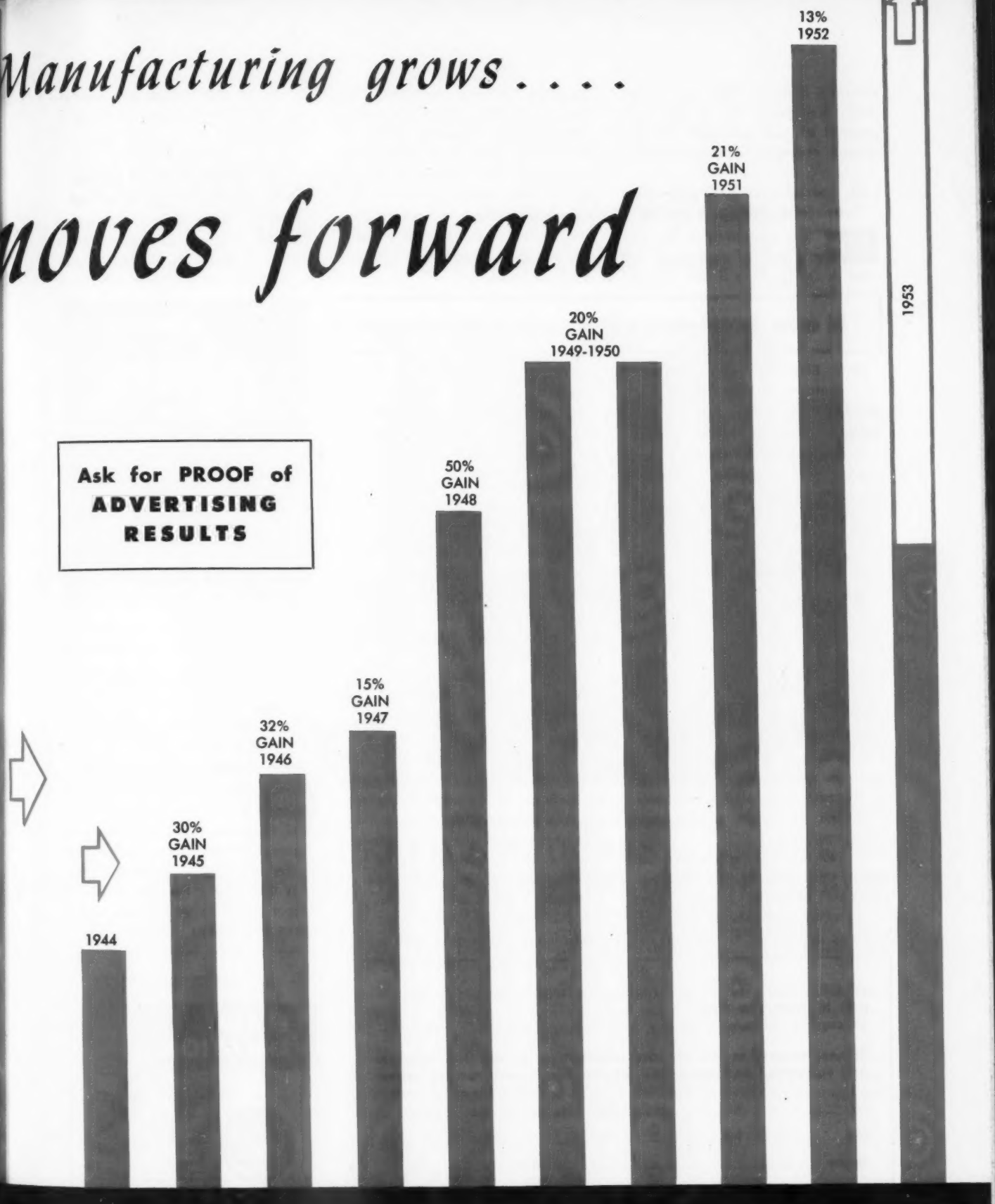
THE MAGAZINE OF
Appliance AND
Metal Products MANUFACTURING

FROM RAW METAL TO FINISHED PRODUCT

Dana Chas

Manufacturing grows . . . .

moves forward



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acetylene flame at 5000° F. As the photo was taken, the treated steel panel at left was unharmed after 4½ seconds exposure to the same flame.

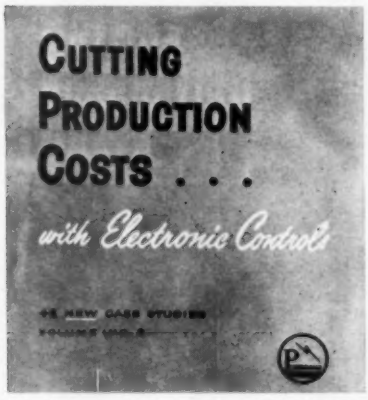
I-20. Special packaging paper has "lubricated" protective surface

New For protection of the fine finishes of appliances and other metal products a new packaging paper has been introduced. The "lubricated" finish of this sheet packaging material is said to reduce resistance, so there is no abrasion or scratching. The material is said to be specially treated, and will not stain, stick, scratch or leave impression marks on the finishes of valuable products. Samples of the material are available.

New Industrial Literature

901. Electronic controls book contains 46 case studies

New A new edition of the book "Cutting Production Costs with Electronics Controls" is a complete revision of a handbook which



has been referred to as the "bible" of electronic control for engineers, production executives and management personnel.

The 46 new case studies explain clearly and factually how standard packaged electronic controls have solved many problems of weighing, counting, measuring, timing and cycling, thereby achieving new efficiency through the use of electronic controls for all types of application.

The book is available at no cost to readers requesting it on their company letterhead.

902. Guide book on lithium

New A new guide book on lithium and its compounds contains many new ideas and new applications of lithium chemicals, as well as a complete coverage of current commercial applications of lithium compounds.

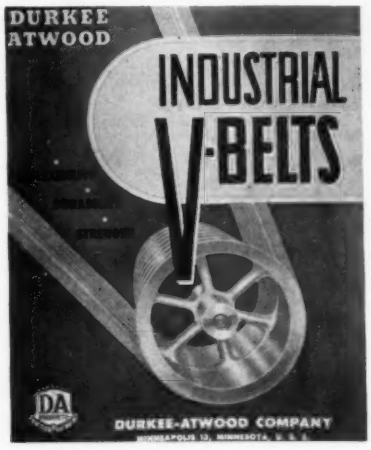
903. Bulletin on air handling units

New A new six-page bulletin describing features of a complete line of air handling units for industrial and commercial heating, ventilating and air conditioning application is available. Outstanding characteristics of the units include: heavy welded construction, quiet operation, and efficient performance.

Detailed installation possibilities are also given for central plant air conditioning, exhausting heat fumes or vapors, and heating and ventilating requirements where cooling is not needed.

904. Industrial V-belt catalog with new increased hp ratings

New A new 60-page engineering catalog on industrial V-belts and their applications is said to be the first published with new



increased horsepower ratings approved by the Rubber Manufacturers Association. It is a technical publication specifically prepared for design engineers, selected purchasing personnel and maintenance engineers.

905. Bulletin on flaw location

New This bulletin describes how a red dye penetrant is applied to metal parts following precleaning. A white developer is then applied to surface, and the red penetrant then bleeds into the white developer, marking with photographic clarity any defects present.

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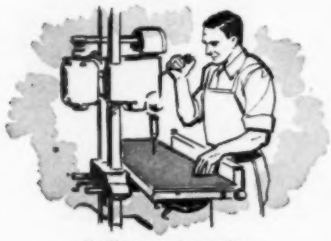
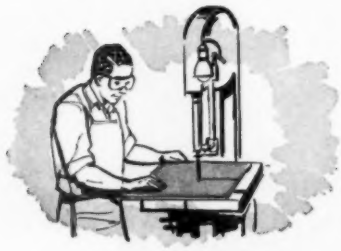
DU PONT VITREOUS ENAMEL FOR ALUMINUM

PERMITS ELIMINATION OF COSTLY PREFABRICATION

REMARKABLE NEW FINISH WITHSTANDS:



Drilling and punching



Sawing and shearing

Welding on reverse side

DU PONT
VITREOUS ENAMEL
FOR ALUMINUM

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BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

Aluminum sheet, finished with Du Pont vitreous enamel, can be cut to size on the job—without damaging the coating! Costly prefabrication is eliminated. Rigidity is increased as much as 60% by a single standard coating of vitreous enamel . . . permitting the use of lighter gauge metal in many more applications.

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ROOM COOLER SHIPMENTS UP 215% FOR FIRST HALF

Manufacturers' shipments of room air conditioners for the first half of 1953 indicate an increase of 215% over the same period of 1952, it was announced by the Air-Conditioning and Refrigeration Institute. At this rate, 1953 shipments will exceed 1,000,000 units, compared with 365,451 units for 1952.

NESCO NAMES EXEC. VICE PRES.

Robert L. Purcell, vice president and treasurer, Nesco, Inc., has been named executive vice president, it was announced by J. A. B. Broadwater, Nesco chairman, who also reported the appointment of Martin Segal as vice president and treasurer.

PHILCO PERSONNEL CHANGES

W. H. Jeffery has been promoted to vice president and general manager of Philco Corporation of Canada, Ltd., Toronto, according to Sydney L. Capell, president, Philco International Corp.

The position was previously held by Capell, who transferred from Toronto to Philco headquarters in Philadelphia early in the year to become president of Philco International and assume direction of all Philco manufacturing and sales activities outside the U.S. At that time, Jeffery was named general manager.

It is reported that the new Philco Canadian plant in the Don Mills suburb of Toronto will be in operation about January 1, 1954.

HALMER NAMED PLANT MANAGER OF ODIN STOVE

R. G. (Bob) Halmer has been appointed plant manager of Odin Stove

Mfg. Co., according to announcement by D. O. Tomlin, president of Odin and of Dearborn Stove Co., of Dallas, Texas, new owners of Odin.

Halmer joined Odin in 1922, as an apprentice stove mounter, and has progressed through a succession of jobs to his present position.

FRESH'ND-AIRE NAMES KELLY

Cory Corporation has announced the appointment of Henry P. Kelly as assistant chief air conditioning engineer for the Fresh'nd-Aire Company division, Grayslake, Ill.

TAPPAN STOVE PROMOTES MABEE, HOWER, CONSTANCE

W. R. Tappan, vice president and general manager, The Tappan Stove Co., Mansfield, Ohio, has announced the following appointments:

John F. Mabee, formerly quality control manager, named assistant plant superintendent in charge of range manufacturing; B. L. Hower, assistant superintendent, will concentrate on production, purchasing, and defense work; and Fred G. Constance, formerly service manager, named quality control manager.

6-MONTH GAS RANGE SHIPMENTS TOTAL 1,144,600, UP 10.2%

Shipments of domestic gas ranges increased 10.2% during the first six months of 1933 over the same period in 1952, according to the Gas Appliance Manufacturers Association.

Edward R. Martin, GAMA's director of marketing and statistics, reported that gas range shipments totaled 1,144,600 for the first half of this year, compared with 1,038,300 during the same period last year.

SERVEL'S ELECTRIC WATER HEATERS READY FOR MARKET

First shipments of Servel's new automatic electric water heaters were made to distributors recently, according to Emil P. Nensel, sales manager of the company's water heater division. The new electric water heater line consists of three series of cylinder-type models and two series of table-type models.

FIRESTONE SUBSIDIARY GETS $8 MILLION SHELL CONTRACT

A contract award of $8,000,000 was made recently to New Bedford Defense Products, a subsidiary of The Firestone Tire & Rubber Co., by the Boston Ordnance District, Army Ordnance Procurement Agency in New England. The contract, for pro-

duction of 106-mm shells, is the Army's second major award this year to the Firestone subsidiary.

NORRIS-THERMADOR NEGOTIATES TO BUY LINDEMANN & HOVERSON

As this issue of *finish* went to press, negotiations were underway concerning the purchase of A. J. Lindemann & Hoverson Co., of Milwaukee, by Norris-Thermador Corp., of Los Angeles. It was indicated that if the purchase were consummated, the present management of Lindemann & Hoverson would be left intact.

BUCKINGHAM ELECTED PRESIDENT OF THOR

Announcement of the election of Henry C. Buckingham as president of Thor Corporation, Chicago, was made recently by Raymond J. Hurley, chairman of the board. He succeeds John R. Hurley, who died June 21.

H. C. BUCKINGHAM

Buckingham has been vice president in charge of plant operations at Thor for the past five years, and has been with the company since 1935. As vice president in charge of plant operations, he helped develop Thor's program which added electric ranges, refrigerators, freezers and dryers to the company's line.

PEMCO TO PRODUCE PORCELAIN ENAMELS FOR ALUMINUM

Pemco Corporation, Baltimore, has announced its entry into the porcelain enamel for aluminum field. As one of the leading producers of porcelain enamel frits for steel, this entry into the aluminum coatings field will add new impetus to a rapidly growing material.

Aluminum fabricators and finishers, and enameling shops now processing enameled steel, have indicated much interest in this process. W. Russell Greer, Pemco vice president, states, "The enameling of aluminum requires special facilities separate and distinct from those used for steel. While the procedures are closely related, the same equipment can not be used interchangeably."

Pemco has been licensed to manufacture commercially the aluminum enamel frits developed by DuPont.

BINKS FINISHING SCHOOL

Binks Manufacturing Co. has announced the following dates for its Spray Painting School, to be held at their main plant in Chicago: Sep-

tember 14-18; October 5-9; November 2-6; and December 7-11.

JOHN McLAUGHLIN JOINS *FINISH* STAFF

finish is pleased to announce the addition of John L. McLaughlin to

finishfoto

its staff. McLaughlin will be primarily concerned with customer service; however, he will also serve as an associate technical editor on specialized subjects.

A graduate engineer of North Carolina State College, and a Lieutenant Colonel in World War II, McLaughlin has had 12 years' experience as a field engineer serving the plants of appliance and other fabricated metal products manufacturers. His work has included consultation with management, engineers and plant men in many leading metal products manufacturing plants, as well as the institution of new processes and development of quality standards.

McLaughlin has a number of technical papers and reports that have been published over a period of years. He also authored a specialized series on plant "trouble shooting."

"Johnny" comes to *finish* with a fine background of technical, management, and practical experience which should prove valuable to *finish* readers and *finish* customers alike.

M. H. RHODES NAMES PRES.

M. H. Rhodes, Jr., sales manager of the timer division for the past three years, has been elected president of M. H. Rhodes, Inc.

C. L. BRYANT CO. SOLD

It is reported that Edward Lamb Enterprises, Inc. has acquired the C. L. Bryant Co., Cleveland, manufacturers of gas and oil furnaces.

GAS WATER HEATER SHIPMENTS UP 26.5% FOR FIRST HALF

Edward R. Martin, director of marketing and statistics for the Gas Appliance Manufacturers Association, said shipment of 1,178,300 automatic gas water heaters during the first half of 1953 topped the 1952 6-month levels by 26.5 per cent.

50% OF EASY WASHING MACHINE VOTING STOCK SOLD BY DERSCHUG ESTATE

Announcement of the sale of 50 per cent of the Derschug Estate voting stockholdings of Easy Washing Machine Corp., Syracuse, New York, to Murchison Brothers, an investment partnership, of Dallas, Texas, was made by Mrs. H. Paul Nelligan, trustee for the John N. Derschug Estate.

James H. Clark and William H. Bowen, both of Dallas, and executives of Murchison Bros., were elected to the board of directors of Easy.

W. Homer Reeve, president of Easy, said that except for the addition of the two new board members the transaction would not affect the management organization, present policies or future plans of the company.

PEI ANNUAL MEETING IN WHITE SULPHUR SPRINGS

The Porcelain Enamel Institute will hold its 1953 annual meeting at The Greenbrier, White Sulphur Springs, W. Va., September 30 through October 2, according to John C. Oliver, PEI secretary.

The program committee, under the direction of Herbert Turk, of Pemco Corporation, chairman, and E. M. Hommel, of The O. Hommel Company, vice chairman, is planning a full program.

The PEI 22nd annual meeting is aimed to present information and data that can be of positive benefit to those in attendance, and at the same time provide an opportunity for interchange of ideas, discussion and recreation.

Featured are two general sessions, one devoted to the theme "Progress for Our Industry through Cooperation", and the other to the theme of "New Uses for Porcelain Enamel."

New officers of the following divisions will be elected: Sign, Architectural, Frit, Steel Plumbing Fixtures and General Enameling.

ROBERTSHAW-FULTON OPENS NEW OFFICE IN CLEVELAND

Opening of a new Cleveland combination sales office and machine shop for the assistance of appliance manufacturers has been announced by F. H. Post, sales manager of the Robertshaw Thermostat Division, Robertshaw Fulton Controls Co. The

office, located at 1535 East 55th St., will be under the charge of W. F. Cathcart.

TOP-LEVEL MANAGEMENT APPOINTMENTS AT DEEPFREEZE

Leo G. Jacques, president of Motor Products Corp., announced that L. J. Sorensen has been elevated from vice president and general manager

L. J. SORENSEN

to executive vice president of the Deepfreeze Appliance Division.

Simultaneously, Sorensen reported that F. F. Duggan, former general sales manager of major appliances for the Crosley Division of Avco Mfg. Corp., will soon join Deepfreeze to take over the vacated position of vice president and general manager.

F. F. DUGGAN

EXPECT LARGE CROWD AT REFRIGERATION EXPOSITION

Many executives from metal working industries are expected to attend the Refrigeration & Air Conditioning Exposition in the Public Auditorium, Cleveland, November 9-12, according to George E. Mills, show director. Advance registrations indicate widespread interest from many different parts of the industry.

The exposition, sponsored by the Refrigeration Equipment Manufacturers Association, will be the largest ever undertaken in the field. More than 2,500 experts will be on hand to answer visitors' questions, and 200 will conduct displays.

APPLIANCE MANUFACTURERS REPORT RECORD SALES

PHILCO CORP. sales in the first six months of 1953 set a new record for any similar period in the company's history, and were 44 per cent above first six months of 1952, according to William Balderston, president.

ADMIRAL CORPORATION reported record six-month sales for the first half of 1953 — 58 per cent higher than in 1952. Executive v.p. John B. Huarisa said that June shipments of television receivers reached record volume, although October and Nobember usually are the highest billing months of the year. The outlook for the second half of the year is bright, according to Huarisa.

FRIGIDAIRE DIV. of General Motors reported June 1953 as the biggest June in the company's history, and the first six months of this year as Frigidaire's biggest initial six months on record. Sales of all Frigidaire kitchen and laundry appliance products during the first half of 1953 showed an increase of better than 25 per cent over the same period of 1952. The company's air conditioning and commercial refrigeration sales are at an all time high — 53 per cent above the first half of 1952.

GENERAL ELECTRIC CO. reported record sales for the first six months of 1953, and an increase of 33 per cent over the sales total for the same period in 1952.

WESTINGHOUSE ELECTRIC CORP. reported that sales of electric housewares in July broke all previous records for any month in the company's history, it was announced by Ralph Z. Sorenson, manager of electric housewares which include toasters, roaster-ovens, cooker and fryer, food mixer, grill and waffle baker, steam and dry irons and warming pads. Sales of electric housewares and bed coverings for

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Photo of a Mt. Vernon Furnace & Mfg. Co. range with PERMA-VIEW window. This is one of the growing number of regular users of the "visible baking" feature.

Yes sir, it's as simple as that. The PERMA-VIEW oven door window comes to you ready for immediate installation in your range—to add a sales feature second to none, as the demand grows for "visible baking."

The strong steel encased, double pane PERMA-VIEW window incorporates the finest quality heat resisting glass. It is mechanically sealed to prevent infiltration of vapors and to eliminate "fogging."

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MILLS PRODUCTS, INCORPORATED

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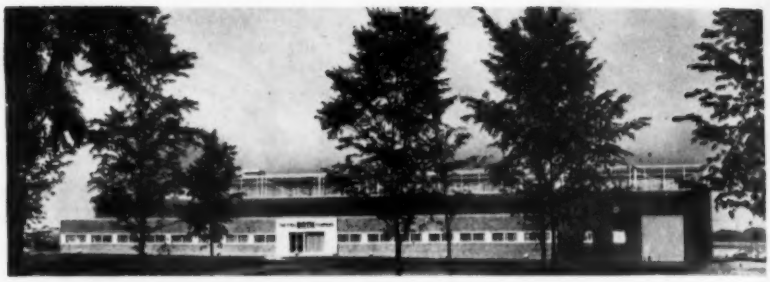
the first seven months of 1953 were 47% greater than sales during the same period of 1952, said Sorenson.

PERFECTION STOVE CO. reported profits before taxes increased 47.7 per cent during the first half of 1953 over corresponding period in 1952. D. S. Smith, president, reported to stockholders: "Both sales and earnings have shown definite improvement this year over last, during the first half. With a continued substantial backlog of defense orders, a steadily improving export market, and an anticipated reasonable sale of our civilian products during the remainder of the year, we feel that the improvement evidenced during the first six months will continue during the second half of the year."



Cyril Bath's new plant *— in Solon, Ohio — held its preview opening August 14 and 15. The $2,000,000 plant was designed to make the most effective use of space and light. Cyril J. Bath, president, stated "The lighting and appearance of the plant is in accordance with an artist's approach to his craft, for the people who make machine tools are artisans." Radial draw formers will be produced in the new plant.*

ERVEEN CORP. FORMED

Announcement has been made of the formation of Erveen Corporation, an affiliate to Ervite Corporation, Erie, Pennsylvania. The new company was established for the sales, engineering and erection of architectural porcelain enamel.

Mark van der Kloet, president of the new firm, is well known in the architectural porcelain enamel field, having been connected with the Erie Enameling Company for a number of years.

ODM REVISES TITANIUM SPONGE DEFENSE GOAL

A revised defense expansion goal for titanium sponge was announced by the Office of Defense Mobilization, calling for annual production of 25,000 tons in 1956 — an increase of 3,000 tons over the goal established October 13, 1952.

CALCO TO BUILD $14 MILLION TITANIUM DIOXIDE PLANT

American Cyanamid Company's Calco Chemical Division will build a $14 million titanium dioxide plant on the outskirts of Savannah, Georgia, it was announced by Kenneth C. Towe, firm president.

Construction of the new plant will begin the last quarter of this year, and is expected to be completed early in 1955. It will occupy a 1,600-acre tract of land.

RYAN NAMES CHIEF ENGINEER

Ryan Industries, Hopkins, Minnesota, has announced the appointment of E. L. Ham as chief engineer.

MUNTZ TV STARTS COOLER OUTPUT

Muntz TV, Inc., Chicago, has entered the room air conditioner field, and is currently in production on the new line in their Evanston, Illinois, plant.

Although the company is producing half-ton and ¾ ton models, emphasis is placed on the larger size. The new item will be sold and serviced direct from factory to consumer, in the same manner as Muntz TV sets.

TRANTER MFG. AWARDED AIR FORCE CONTRACT

James R. Tranter, president of Tranter Manufacturing, Inc. (formerly Kold-Hold Mfg. Co.), Lansing, Mich., has announced that his firm has been awarded a new Air Force contract to manufacture classified war material.

The new order, valued at a half-million dollars, brings to more than $5 million the amount of unfilled military orders currently on the company's books. Tranter said the latest contract is expected to be the forerunner of others in the future.

DETROIT STEEL PRODUCTS OPENS PLANT IN PITTSBURGH

The new Pittsburgh plant of the Detroit Steel Products Co. have begun operations, according to E. A. Miller, manager of the building panel division.

The new plant was engineered to handle Detroit Steel Products' full line of panel shapes for use in institutional, commercial and light industrial construction. Initially, the new plant will turn out only roof deck panels. Later, however, wall and floor panels will also be produced, according to Robert E. Harris, newly-appointed plant superintendent. Full production on all panel shapes is expected by early October.

The new facilities will be located in West Elizabeth, a suburb of Pittsburgh, and will add 70,000 square feet to the company's production area.

PERFECTION STOVE ANNOUNCES PERSONNEL CHANGES

Marc Resek, formerly vice president of engineering, has been named vice president in charge of all research. This will include market research, research for new and current products, and research involving contract items.

W. H. Haag is now vice president of manufacturing, engineering and purchasing. He previously headed up the manufacturing and purchasing divisions.

W. M. Day, chief engineer, has been placed in complete charge of the engineering department.

Both Resek and Haag are members of Perfection's board of directors.

GENERAL RADIATOR SOLD TO MARION MANUFACTURING

General Radiator Co., Marion, Ill., has been sold to a newly-formed corporation, Marion Manufacturing Co., headed by Malcolm E. Henning, president; George N. Olson, vice president; and Lester D. Bowser, secretary and treasurer. It was stated that General Radiator will be a division of Marion Manufacturing.

GAS HEATING EQUIPMENT SHIPMENTS CONTINUE RISE

Shipments of all three types of gas-operated house heating equipment continued to rise during June, according to the Gas Appliance Manufacturers Association. Edward R. Martin, GAMA's director of marketing and statistics, reported gas-fired furnace shipments totaled 46,200 units during the month, a 26.2 per cent gain over the 36,600 shipped in June of 1952. The June estimate raised the total for the first six months to 219,300 units — an increase of 28.9 per cent above last year's 170,100 for the same period.

Gas-fired boiler shipments also increased for both June and the first half of 1953. Boilers shipped in June were 10.9 per cent higher than June, 1952. Total shipments for the first six months showed a 2.0 per cent gain over same period last year.

Gas conversion burners picked up strongly during the second quarter, following a slow first quarter, to come within 0.2 per cent of last year's first half shipments.

VACUUM CLEANER SALES RISE 10.9% IN FIRST HALF

Factory sales of standard-size household vacuum cleaners in the first half of 1953 showed a 10.9 per cent increase over the January-June period in 1952, according to figures released by the Vacuum Cleaner Mfrs. Assn.

HOUSEMAN HEADS G-E TRENTON HOME HEATING, COOLING DEPT.

General Electric Company has announced the appointment of K. F. Houseman as manager of manufacturing, Trenton (N.J.) manufacturing section, home heating and cooling department.

RONEY HEADS WESTINGHOUSE ELECTROPLATING SALES

Appointment of David M. Roney, Jr., as sales manager in the electroplating projects dept. has been announced by G. W. Jernstedt, engineering manager of the special products development division, Westinghouse Electric Corp. He will be responsible for all electroplating sales activities, with headquarters in East Pittsburgh.

CORY INTRODUCES HOT CHOCOLATE MIXER

J. W. Alsdorf, president of the Cory Corp., Chicago, has announced the introduction of a hot chocolate mixer to the company's line of products. The mixer is a small, powerful, electric motor driven agitator attached to a Cory 12-cup glass decanter.

KAWNEER INTRODUCES ALL-ALUMINUM DOOR

The Kawneer Company, Niles, Mich., has announced the introduction to the building industry of a new all-aluminum door, incorporat-

ing bolted type construction at each corner. The bolted door is an addition to Kawneer's complete line of doors with welded corner construction.

GUNNISON NAME CHANGED TO U. S. STEEL HOMES, INC.

Gunnison Homes, Inc., housing subsidiary of United States Steel Corp., has changed its name to United States Steel Homes, Inc., it was announced by Gen. John J. O'Brien, president of the subsidiary firm.

"Within a few weeks, our company, for the first time, will begin production of factory-made steel buildings at its new plant in Harrisburg, Pa.," O'Brien said. "Therefore, it is our belief that the new name of United States Steel Homes not only will be more appropriate, but also will provide closer identification with the parent corporation."

Initial production at the Harrisburg plant will include hospitals, community clinics, schools, dormitories, and similar institutional-type structures.

The company will continue production of the Gunnison line of wood homes in New Albany, Indiana, where the general offices are located.

Color control of appliance finishes

→ *from Page 26*

both hue and value of the finish, although it has not been found necessary to control chroma or brightness up to the present time on the finishes being used. Color limits are set to cover a practical range, and one that will give a commercial match satisfactory from the customers' point of view. (Figure III)

Reflectometer readings are made on each sample. Then, by use of the simple calculations shown on the color control chart, it is possible to plot the color. This method shows not only the location, but also gives an indication of the color trend from batch to batch on raw materials, and any change or drift from day to day on samples taken from the production lines. The hue is plotted on an area basis while the green value for whiteness is shown on the linear scale at the left of the chart.

Color readings are plotted on these charts for all raw materials used as well as on panels from the daily production in the various finishing departments. All test lots or samples of new kinds of materials being evaluated for quality by various other tests — whether porcelain, paint or plastic — are also checked for color at the same time as a part of the development test procedure.

Naturally, the ultimate aim of the color control program is to have all white products used in the kitchen to match both initially as well as after they have been in use by the customer for extended periods of time, and the above practice has been found to be quite valuable in attaining our goal.

A tool chest for improving the mechanics of porcelain enamel spraying

(Continued from Page 37)

ished work represents literally hundreds of mill batches, thousands of gallons of milled enamel, and innumerable hours of effort. The product of this effort is a treatise of some 70 pages covering every phase of spraying porcelain enamel upon the base metal, from the development of the gun to the atomization, the effect of malpractices in spraying, and the performance of the equipment itself, including spray guns, tanks, hoses, compressed air systems, and pipeline feeding. The paper also covers the different methods of obtaining atomization, such as compressed air, steam, hydraulic pressure, electrostatic and centrifugal forces. The operating characteristics of both hand guns and automatic spray guns is covered, to include the complete automatic spray machines.

Recommended within the paper are compressor sizes, transformers, oil and water extractors, air pressure regulators, recommended flexible hose hookups (including sizes), pressure feed tanks, and other related equipment.

Recommended technique and controls for these systems are also included.

One of the studies undertaken in conjunction with this paper probes for the allowable limits of such factors as: set, specific gravity, atomizing pressures; gun production capacity and other factors which might influence the volume and quality of production in an enameling plant. In each case, the practical aspect has been given precedence over the purely theoretical. The effect of each factor was singled out for observation by holding all others constant while varying the one under study from one workable limit to the other.

The paper includes data in consolidated form on some 67 samples presented with specific gravities, slumps, pick-up, enamel flow, fineness and the operating behavior of the enamel broken down into classifications of the defects as they appeared when each variable was carried beyond the normally satisfactory operating spray limits. Controlled in the tests were the width of spray, the distance the gun was held from the ware, and the approximate spraying time required to deliver a pre-determined volume of milled enamel. The subcommittee has reduced this mass of data to several charts and graphs, each showing the exact operating characteristics, by the degree or the amount, and from these one can easily determine the adjustments that are required, the direction in which these adjustments should be made, and the exact amount of change required to bring the material within control. Each chart is, in reality, a tool for the enameler.

One of the several charts developed is shown here. It shows exactly what compensating changes must be made when changes are made in the rate of fluid flow of the enamel through a gun, anywhere between 600 and 1,000 cubic centimeters per minute. It will be noted from the chart that the proper atomizing pressure for a fluid flow of 600 cubic centimeters would be between 42 and 43 pounds per square inch, whereas such an atomizing pressure at 900 or 1000 cubic centimeters per minute would be entirely insufficient and cause splattering. The graph therefore indicates that an atomizing pressure of approximately 57 pounds per square inch would be required to atomize enamel flowing through the gun at the rate of 1,000 cubic centimeters per minute. This is but one of several graphs, each developed from very exacting data and designed to become a tool and implement for the control and production personnel of the porcelain enameling plant.

The work of this committee provides the enamel industry with an additional and completely new set of tools with which to control and improve the efficiency and quantity of its porcelain enameling operations.

***Batch of bevatron pole tip plates**—processed in Texlite's porcelain plant for the Atomic Energy Commission. The bevatron is designed to accelerate particles to several billion electron volts. Particle energies in this range will permit experiments on a new frontier of atomic research. Altogether, some 30,000 pole tip plates will be used in the bevatron.*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safe transit

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Plant experience information for all executives and plant men interested in the problem of packaging and shipping improvement and loss prevention.

Complete information on the National Safe Transit pre-shipment testing program for packaged finished products, and detailed progress reports of divisions and sub-committees of the National Safe Transit Committee.

CONTENTS

Better protection for overseas shipments — *of military supplies — is the goal of research studies on nailed wood boxes and crates being conducted at the Balcones Research Center at the University of Texas. Photo shows a typical specimen being deformed under controlled static loading. Deformation and force measurements are being recorded by Dr. E. A. Ripperger (right), associate director of Balcones' new Container Research Laboratory, assisted by Chu-Chin Lee. The research work is being conducted for the Quartermaster Food and Container Institute.*

Monogram ranges — *roll off the assembly line in the plant of Quincy Stove Manufacturing Co., Quincy, Illinois. For a report on how National Safe Transit testing has helped lead to product improvement at Quincy Stove,* *turn to Page ST-6.*

Wirebound,
Nailed or Hinge Corner
Cleated Plywood
Cleated Craveneer
Cleated Corrugated
Watkins Type Containers
Shop and Tote Boxes
Woodsteel Nesting Boxes

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FOR PEACE OR DEFENSE

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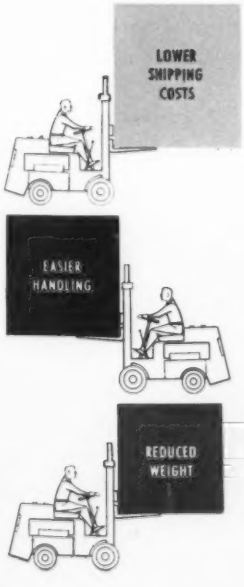

There is practically no limit to what you can ship in a Wirebound . . . for Wirebound is *a most versatile container*. Wirebounds combine the strength of steel wire with the resilienc[illegible] of wood in limitless combinations. For example, look at the rock bit box on the left. This small, rugged Wirebound eliminated previous stacking failure and in-transit damage losses. So did the Wirebound band saw crate on the right. For greater safety and greater savings, investigate Wirebounds . . . today!

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BOXES & CRATES

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☐ Send me a copy of "What to Expect from Wirebounds"

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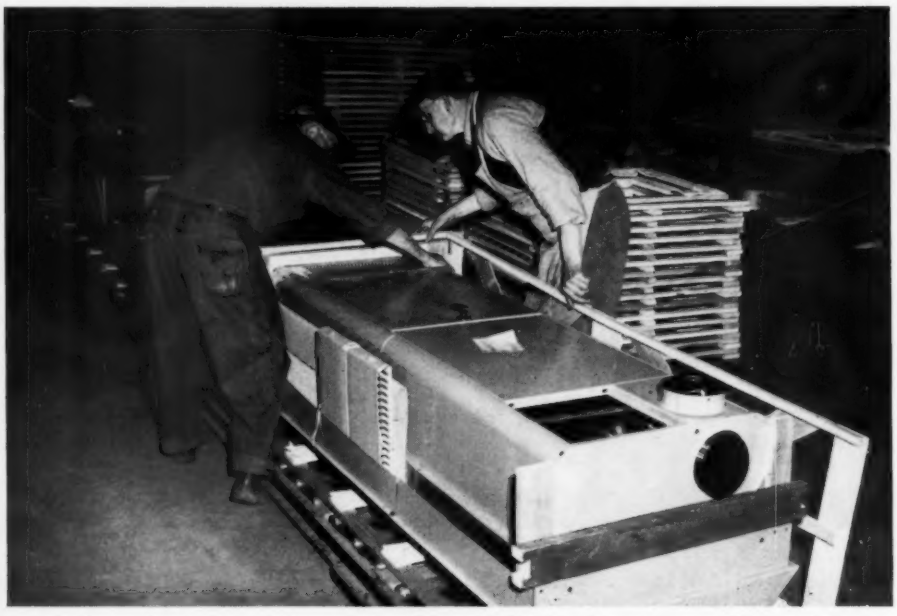
City, Zone and State_____

Container mat comes in two sections which can be stored flat. Five fasteners at each end are used to lock mat firmly around oil heater and interior packing.



Safe packaging for oil furnace is obtained with simple wrap-around mat. Note how brace is notched to fit center cleat of exterior package.

Top is fitted into place to complete packaging operation on a Monogram oil furnace at the Quincy Stove plant.

Safe Transit te
point way to ct i

*by Herman D. To*se of
uincy
eate

SALES MANAGER, QUINCY ST
MANUFACTURING CO., QUINCY,

Exclusive features
safe transit

Like any manufacturing concern that takes pride in the quality of its product, we at Quincy Stove are constantly on the lookout for ways to improve our "Monogram" line of ranges and heaters. We little expected, however, when we first launched a program to improve our packaging, that we would uncover data leading ultimately to sounder design in the product itself.

Damage caused loss of dealerships

In our interest in better packaging, we were responding to a very real need. We had been experiencing extreme difficulties with shipments of both oil burners and ranges. Some shipments were arriving in such poor condition that the merchandise couldn't be sold, and we were actually losing dealerships in the East. It was painfully obvious that something would have to be done about this situation. Our purchasing agent, G. H. Wilde, who had been contacted by a representative of our container producers,

HERMAN D. TOW

ct improvement

se of pre-shipment testing at uincy Stove cuts range and eater losses to a minimum

PHOTOS COURTESY GENERAL BOX CO.

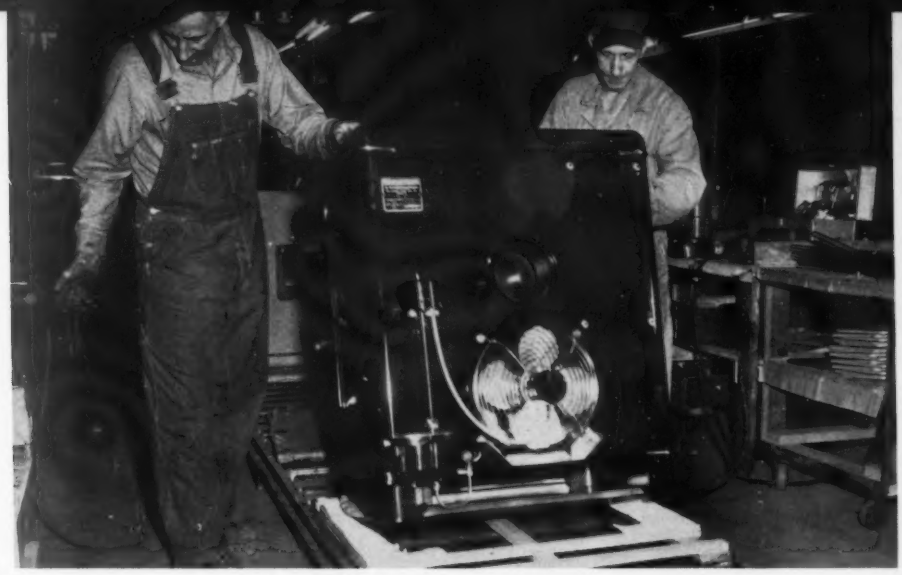
which maintain a Safe Transit certified laboratory, arranged to have this laboratory test our packaged products in order to overcome these difficulties.

During the course of these tests, however, it became apparent that better packaging alone would not completely solve our problem. During vibration tests, several of our products suffered damage. For instance, in one typical case our interior bracing, which we had found to be quite adequate for the operation of the appliance, required reinforcing if it was to be proof against hazards of handling and transit.

Armed with the data we had obtained at the laboratory, we set about redesigning our products as required to allow a greater margin of structural rigidity. With these changes we were able to pass Safe Transit pre-shipment tests with flying colors. Through the use of pre-shipment testing, we were thereby able not only to attain better designed packaging but to obtain data which pointed the way to improvements in our own manufacturing techniques.

Better customer relations— increased sales

In the three years that our program of pre-shipment testing has been in effect, our total damage allowance has been only a few hundred dollars. Our distributors and customers alike have been quick to appreciate our efforts towards safer transit, and the resulting sales increases have been very gratifying.



First step in packaging of a Monogram oil heater. Unit is lowered onto a padded base and then bolted down.

Sturdy wood frame corrugated container is then fitted around oil heater, and panels are nailed together.

Safe Transit label is affixed to packaged product. This is assurance to dealers and customers that Monogram products should reach them in perfect condition.

NST CERTIFICATION FOR LOCKE STOVE, UNITED SPECIALTIES

The National Safe Transit Committee, Washington, D. C., has announced the certifications of Locke Stove Company, Kansas City, Missouri, and United Specialties Company, Philadelphia, Pennsylvania.

NST headquarters reports that a total of 132 manufacturers and 24 container testing laboratories are now participating in the National Safe Transit Program, with more firms awaiting certification.

AAR FREIGHT LOSS, DAMAGE PREVENTION COMMITTEE MEETS

The National Freight Loss and Damage Committee of the Association of American Railroads held its fourth regular meeting July 22, at the Morrison Hotel, in Chicago.

Special attention was given to reports of the sub-committees investigating the prevention of damage to specific commodities. Other subjects, including new developments in shipping containers and the handling of carload and less-than-carload freight, as well as stop-off shipments, were given attention along with railroad and shipper cooperation in national freight loss and damage prevention activities. It was stated that shipper acceptance and demand for the section's new stop-off poster had necessitated the printing of the second 100,000 copies.

It was officially recognized that the month of *October* will be designated by railroad members as "*Careful Car Handling Month,*" and a concerted effort will be made with special posters, announcements and other publications. A number of the individual railroads will use audio-visual education as a means of further improving their car handling. It was stated that this will be a continuing program seeking to promote more intensive and widespread carrier participating and activity in the prevention of loss and damage to freight.

PACKAGING INSTITUTE FORUM IN NEW YORK CITY, OCT. 12-14

The Packaging Institute's 15th annual forum will be held at Hotel Statler, New York City, October 12-14, it was announced by E. H. Balkema, chairman of the program committee.

Seventeen different seminars on various aspects of packaging are planned for the three-day forum. A detailed preliminary program, available on request to the Institute, covers seminar topics, including the following:

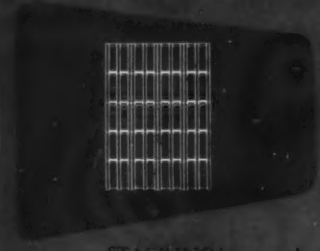
"What Packaging Should, Can, and Cannot Do"; "Evaluating Quality of Printing on Packaging Materials"; "Coordination for Planned Packaging between Client, Designer and Producers of the Package"; "Packaging as a Profession"; "Packaging as Part of the Manufacturing Cycle"; "New Things in Packaging Research"; "Standard Timing of Automatic Packaging Equipment"; and "Quality Control Enters the Packaging Department."

WATKINS Containers cut shipping costs

ASSEMBLY is speeded up with this easy-to-handle container. The assembly crews are all for packing the Watkins Way.

HANDLING shocks in the factory, in transit, and during delivery are resisted by the wood cleats, glued tube mat construction.

STORING problems are reduced to a minimum because of the 3-section design which provides for flat, close nesting.

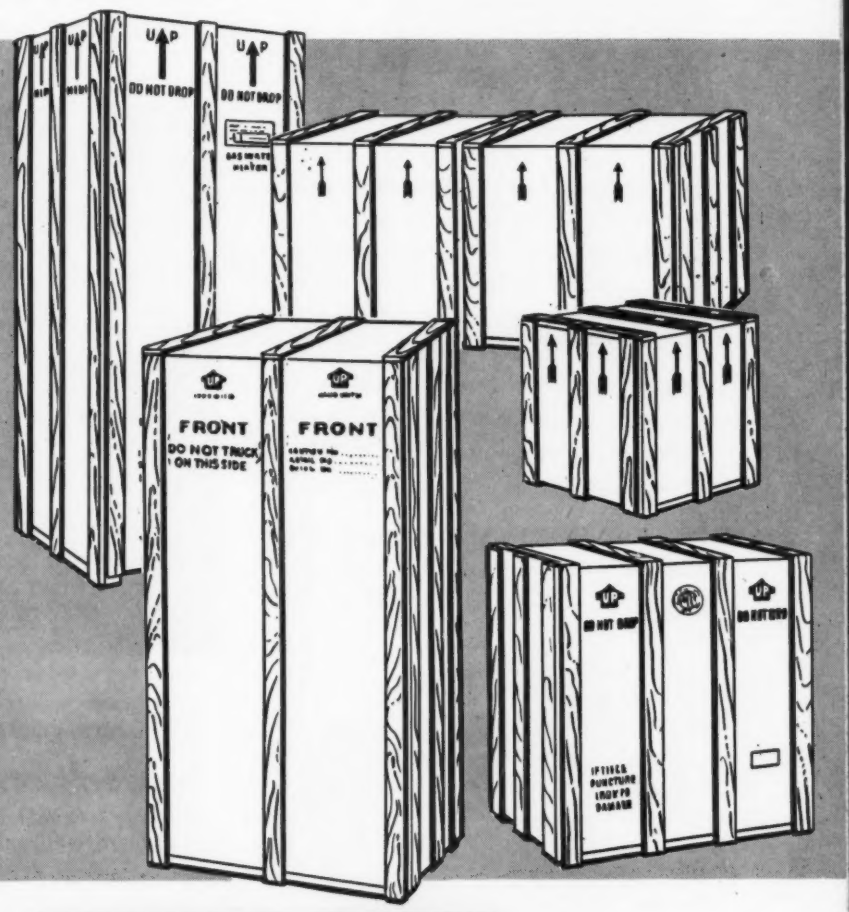


STACKING is easy and safe, due to the supporting strength (minimum 4 tons on most containers) that is *engineered* into the Watkins design.

WATKINS Cleated, Corrugated Containers will cut your shipping costs. They are delivered to your factory 75% assembled and designed for quick and easy completion, to save you labor, time, and expense. Scientific design gives maximum strength, yet keeps container weight at a minimum and reduces your shipping costs.

In a Watkins Container your product is COMPLETELY protected—enclosed 100% by a smooth, staple-free interior to safeguard fine finishes and to keep out dust and dirt.

Ship your carefully manufactured products safely and economically—ship them the "Watkins Way."

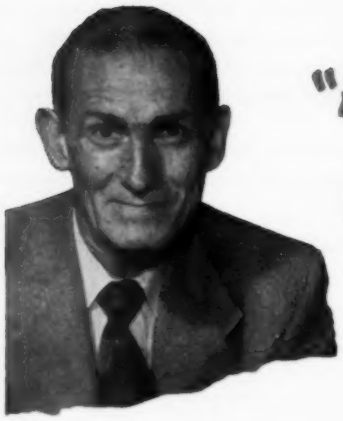


These companies build WATKINS Containers

Cornell Paperboard Products Co. .... 1514 E. Thomas Ave., Milwaukee, Wis.
Cozier Container Corp. ..... 446 East 131st Street, Cleveland, Ohio
Crate-Rite Mfg. Corp., Division of Pacific Ports Ind. Inc. ..... 10901 Russett Street, Oakland, California
Dura-Crates, Inc. ..... 940 East Michigan Street, Indianapolis, Indiana
General Box Co. ..... 1825 Miner St., Des Plaines, Illinois, and 16th and Maple Sts., Louisville, Kentucky
Homb & Martin Mfg. Co. ..... Watseka, Illinois
Illinois Box & Crate Co. ..... 811 Center Street, Plainfield, Illinois
Kieckhefer Box & Lumber Co. ..... 1715 West Canal Street, Milwaukee, Wis.
Lane Container Corp. ..... 10212 Denton Road, Dallas, Texas
Lewisburg Container Co. ..... 243 Singer Street, Lewisburg, Ohio
Livingston Wood Manufacturing, Ltd. ..... Tillsonburg, Ontario, Canada
Love Mfg., Inc. ..... 608 South Commerce Street, Wichita, Kansas
Utility Crate Corporation .... 1985 E. 16th Street, Los Angeles 21, California

—an inquiry to any of these companies will get prompt attention—

The · WATKINS CONTAINER · Manufacturers



"Fine Finishes are protected by a Fine Paper"...

Reports **Mr. A. B. Carlisle,** *Purchasing Agent*
P. M. STEEL PRODUCTS, INC., Manufacturing Division, A. S. Aloe Co.

"We want to be sure that the fine finish we so carefully apply to our products is not damaged during shipment. That's why sheets of PRO-TEX-MOR Paper are used on all surfaces subject to scratches and abrasion." P. M. Steel Products, like many other leading firms throughout the country, is using Central States' PRO-TEX-MOR Paper for protection of fine metal and wood finishes.

PRO-TEX-MOR is specially treated and will not stain, stick, scratch or leave impression marks—and yet it is low in cost.

*T. M. Reg.

Here's the proof that PRO-TEX-MOR* won't scratch fine finishes

(As Shown At The Packaging Exposition In Chicago.)

This "teeter-board" is a test device that showed the relative abrasion of the different types of paper generally used. On the left, Dry Waxed Kraft slides slowly down the inclined enameled steel surface. On the right, Plain Kraft has sufficient resistance that the weight barely moves at this angle. In the center, the weight with PRO-TEX-MOR Paper attached slides smoothly and quickly over the metal surface. The "lubricated" finish of PRO-TEX-MOR reduces resistance, so there is no abrasion or scratching.

CENTRAL CS STATES
PAPER & BAG CO.
5221 NATURAL BRIDGE ST. LOUIS 15, MO.

WRITE FOR SAMPLES AND PRICES

Offices in Principal Cities • Plants in: ST. LOUIS • BEACON, N. Y. • SALT LAKE CITY • AUBURN, WASH.

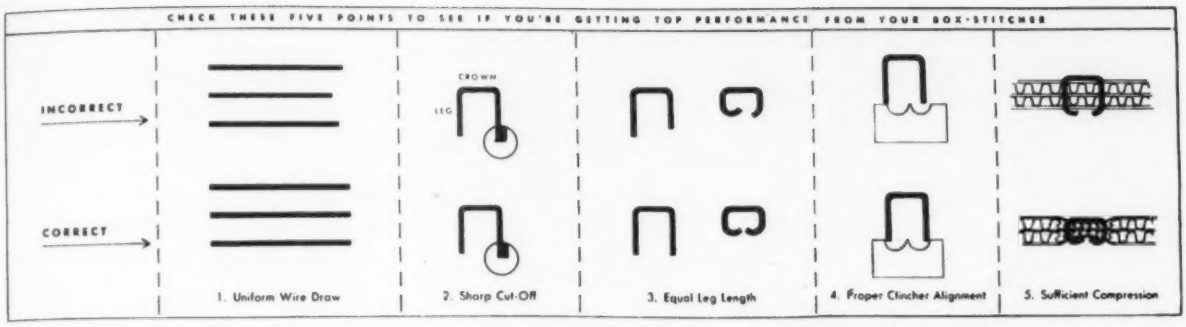


Figure 1 — Five principles to observe to assure efficiency of carton-stitching machines.

How to get good performance from your carton-stitching machine

by John Prout • MANAGER, FLAT WIRE STITCHING DEPT., ACME STEEL COMPANY, CHICAGO, ILL.

IT IS easy to get efficient, trouble-free performance from your wire stitching machine once you learn how to recognize good stitching. The distinction between good and bad stitching can be made easily if one will remember the simple basic characteristics and the simple functioning which produces a good stitch.

All carton-stitching machines are basically alike in function. Each machine draws wire from a coil, cuts the wire to proper length, forms the wire into a stitch, drives the stitch through the material, and clinches it. Wire stitching machines now available to industry have been designed to give years of efficient service with little maintenance.

Defining a "good stitch"

A properly operating machine will deliver a continuing number of good stitches. In general, a good stitch is one which has its crown flush with the surface of the material being stitched and the legs clinched tight enough to partially bury the ends in the material.

Even though the stitch crown may appear to be correct, there is no assurance that the stitch is properly clinched. For this reason, efficient operators inspect stitches periodically by turning the carton over and glancing at the clinched portion of the stitch legs to determine whether all stitches are satisfactory.

Basic operating principles

Observing five simple principles—in the order given — proper adjustment of your wire stitcher is assured and your stitching-operating efficiency will be increased through a saving in both time and cost. The basic operating principles, as illustrated in Figure 1, are:

1. *Wire draw*—The amount of wire draw must be in accordance with the work thickness of each job — about 3/16 to 5/16-in. longer than the thickness of the compressed material. In addition, the wire draw must be continually uniform for any one job. Check the length of each piece of wire after it is cut and just prior to its being formed into a stitch to make certain all pieces are of equal length.

2. *Proper wire cut-off* — The ends of each wire length must be free from burrs. When a sharp cut-off is not effected, the stitch legs will not penetrate straight through the material being stitched, and the stitch legs will not be clinched properly. If several stitches are cut off and formed by turning the fly-wheel by hand, and then removed before clinching, any burrs existing can be easily detected by rubbing the fingers over the ends of each wire length.

3. *Stitch legs of equal length*—By hand-turning the stitching machine fly-wheel, the forming and clinching operation is slowed sufficiently to determine the equality ($\pm$ 1/16-in) of stitch-leg length. As the stitch legs start to project from the formers, leg length can be determined by brushing finger over the bottom of the former.

4. *Proper alignment of clincher block* — The clincher block must be aligned so that each stitch-leg will contact the clincher block grooves in the same relative position. By hand-turning the stitching machine fly-wheel, the alignment of stitch-legs with the clincher block groove may

Figure 2 — Showing operation of a carton-stitching machine. Savings in both time and money can be achieved by following five simple operating principles.

be observed, and if necessary, corrected.

5. *Sufficient compression of material* — The material being stitched must be firmly compressed between formers and clincher to get a satisfactory stitch. To secure proper compression, the clincher block should be raised or lowered as required by adjusting the necessary parts until the formers mark the material slightly. Excessive compression will crush or damage the material. Insufficient compression will result in an improperly clinched stitch. In making compression adjustments, lower the clincher to its lowest position. Then raise gradually until a good stitch is obtained indicating proper compression.

Becoming familiar with these five simple principles will permit you to improve carton-stitching operations. The ability to recognize good stitches is a major contribution to less maintenance resulting in a reduction of down-time and improved efficiency of operations.

to Page ST-14 →

MIT SPONSORS PACKAGING SHORT COURSE

Prof. C. Richard Soderberg (right), head of the Department of Mechanical Engineering at the Massachusetts Institute of Technology, discusses with Assoc. Prof. John E. Arnold early plans for the technical short course educational program that it will present and co-sponsor in October, in Boston, with the Society of Industrial Packaging and Materials Handling Engineers. Professor Arnold was appointed MIT coordinator for the course.

Put A Gaylord Man On Your Team... It Pays Off In Reduced Packing Costs

One manufacturer is saving 75% in packing costs and 55% in container weight with his new Gaylord-designed "package".*

Your savings may not be as great . . . but a Gaylord man, working with management, design, production and purchasing, is almost certain to come up with cost-cutting suggestions for tough packing problems.

Look in the classified pages of your phone book under "Boxes (Gaylord)" for the Sales Office nearest you.

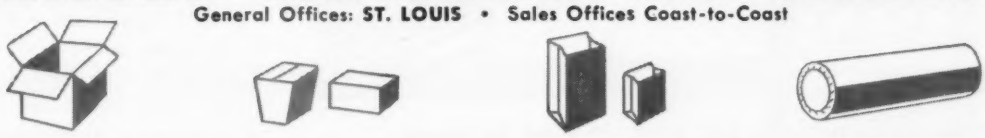
Name and address on request.

Gaylord Boxes

Their seen and unseen quality gives you an extra margin of safety.

GAYLORD CONTAINER CORPORATION

General Offices: ST. LOUIS • Sales Offices Coast-to-Coast



CORRUGATED AND SOLID FIBRE BOXES • FOLDING CARTONS • KRAFT BAGS AND SACKS • KRAFT PAPER AND SPECIALTIES

Carton stitching

→ *from Page ST-12*

Another factor in efficient and economical carton-stitching operation hinges on the operator's ability to know how many stitches should be used to properly stitch various types and sizes of containers, and also to know the proper placement of stitches in various size and shape containers to be assembled or secured.

Shipping and packaging departments should become familiar with the basic carton-closing requirements which cover placement of stitches formed from various types of wire. In most cases, regulations will be met if stitches are placed not more than 2½-inches apart along the outer seams.

Packaging departments should standardize and closely follow the methods and standards of stitch placement. Typical patterns for various size and shape containers are shown in Figure 2. The stitch pattern and procedure to be followed in placing the stitches must be determined in accordance with requirements governed by the size and shape of each container.

AAR FREIGHT LOSS, DAMAGE SECTION NAMES THREE NEW ENGINEERS

The Freight Loss and Damage Prevention Section of the Association of American Railroads has announced the appointment of W. G. Paradise as engineer, with headquarters in Los Angeles.

F. C. Dansereau was appointed furniture specialist to carry out special assignments on containers, packing and carloading of furniture, with headquarters in Chicago.

H. E. Waters was named engineer with headquarters in New York City.

SAFE TRANSIT FILM SHOWN IN HAWAII

The "National Safe Transit Program" film was recently shown in Honolulu, to representatives of the Hawaiian Electric Supply Co., and the Castle & Cooke, Ltd., agents for the Matson Navigation Company.

INDUSTRIAL BAG, COVER ASSN. HOLD ELECTION OF OFFICERS

The Industrial Bag and Cover Association has announced the election of officers as follows:

Re-elected as Association president was H. C. Davis, of Bemis Bro. Bag Co., and as vice president, Stanley Yount, of Southland Paper Converting Co.

In addition to Davis and Yount, the following five men were elected to the Association's board of directors:

Alvin A. Abramson, Central States Paper and Bag Co.; John Metzenberg, Cromwell Paper Co.; Edward Look, Portco Corp.; H. M. Hanson, Kennedy Car Liner and Bag Co.; and Arnold Mills, Propack, Inc.

Retained as the Association's administrative officer was Philip O. Deitsch, who will begin his fourth year of service to the industrial bag and cover industry.

The election of officers was held during the Association's third annual convention held recently at Brockway Hot Springs, Lake Tahoe, California.

ACME STEEL NAMES RASUL

W. F. Hinkle, director of engineering and research for Acme Steel Co., has announced the appointment of Stephen Rasul as manager of design and production engineering for the company's plant in Riverdale, Ill.

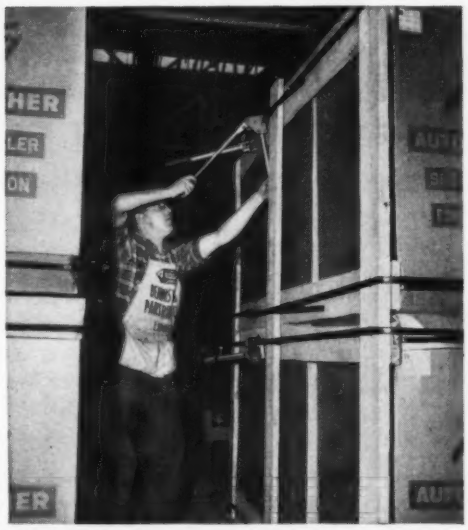
"THAT REMINDS ME—THE BOSS TOLD ME TO HAVE THE BRAKES FIXED ON THE FORK TRUCK!"

Acme Steel Strapping Insures S.A. *(Safe Arrival)*

Strapped shipping cartons pass Maytag Co. torture tests

BOUNCED AND BATTERED. Acme Steel Strapping holds securely as fibreboard shipping carton is vibrated and then butted on each side and bottom in Maytag Company "torture chamber."

MINIMUM MANPOWER. Top and bottom caps on carton containing Maytag automatic washer are each secured by one turn of ½-in. Acme Steel Strapping. Straps are tensioned by push-button operated Acme Steel pneumatic stretcher.



FINAL STEP. After strapped cartons move speedily and safely through packaging department, they are loaded into freight cars and quickly anchored with Acme Steel Strapping.

The Maytag Company of Newton, Iowa, insures S.A. (Safe Arrival) of all its automatic washers by using Acme Steel Strapping both to seal fibreboard shipping cartons, and then to anchor those cartons securely in freight cars.

The strapped carton method was adopted only after torture tests proved it superior to other methods.

An added advantage is that packing the Maytag Automatic with Acme Steel Strapping takes less than half as much manpower as a similar Maytag operation employing previous packing methods.

If you have a packaging problem, chances are Acme Steel Strapping or Acme Steel Stitching Wire methods can provide just the solution you need. Telephone your Acme Steel representative, or write Acme Steel Products Div., Dept. F-93, Acme Steel Company, 2807 Archer Ave., Chicago 8, Illinois.

ACME STEEL

STRAP IT . . . STITCH IT . . . SHIP IT . . . SAFELY!

WINNERS IN CLARK EQUIPMENT MATERIALS HANDLING CONTEST

Awards to two members of the materials handling class at the Illinois Institute of Technology, Chicago, for winning entrants in a Materials Handling Essay Contest sponsored by Clark Equipment Co. were made recently by Walter E. Schirmer, Clark vice president.

Kenneth J. Hlavin, plant engineer for Riley Steel Products Co., Cicero, won first prize of $250 for his essay on "A Problem in Industrial Materials Handling." Winner of the $100 second prize was R. N. Roegner, material handling engineer for Armour and Co.

"LIVE" DEMONSTRATIONS FOR PACKAGING, HANDLING SHOW

With practically every square foot of the original exhibit space sold out and 30,000 more square feet added, the 1953 Industrial Packaging and Materials Handling Exposition, in Boston, October 20-22, will present a number of "live" demonstrations of equipment and materials. This will supplement the regular stationary exhibits, said C. J. Carney, Jr.,

THOMAS W. REGAN

managing director of the exposition and its sponsor, the Society of Industrial Packaging and Materials Handling Engineers.

Thomas W. Regan, vice president of General Box Co., Winchendon, Mass., is chairman of the exposition.

Ray A. Mantz, supervisor of materials handling and the product protection laboratory of manufacturing research, International Harvester Co., Chicago, is chairman of the SIPMHE Protective Packaging and Materials Handling Competition.

John W. Kraus, supervisor of qual-

RAY A. MANTZ

ity control and packaging engineering for the accessories division of Thompson Products, Inc., Cleveland, is chairman of the technical short course to be presented by SIPMHE and the Massachusetts Institute of Technology.

HOW PURCHASING TIES IN WITH PACKAGING OPERATIONS

Purchasing is a tool of management and management uses the purchasing department to obtain the packaging materials and equipment it needs to protect its products and move them on their way through the channels of distribution, said R. de S. Couch at the 4th Regional Quebec Conference of the Packaging Association of Canada, held recently in Montreal. Couch is president of the Packaging Institute, New York City.

Couch's talk covered two main points: the type of person best qualified to fit into a purchasing department and the operation of such a department. The purchasing agent who deals with packaging problems should (1) have a degree of business administration, (2) be able to meet people; (3) be a salesman because one of his main duties is to sell his company to the suppliers as being a good place to do business, (4) know his company's problems not only in packaging — but in manufacturing, and (5) know as much about the suppliers' manufacturing problems as it is possible to learn.

Summarizing, Couch said that "purchasing is a vital link in any business, and it is a never-ending job to see that each purchase justifies itself and that each supplier merits the business he gets. The search for the best supplier with the best quality and the best service and the best price is a never-ending one."

Following Couch's address, there was a panel forum held which discussed packaging problems. G. W. Langston, traffic manager, Crane, Ltd., was panel moderator.

Presiding at the Conference was Claude P. Beaubien, general chairman of the Quebec Regional Committee of the Packaging Association of Canada and district sales manager of Aluminum Company of Canada.

Pallet load of 120 enameled cones spaced with paper collars and cardboard strips.

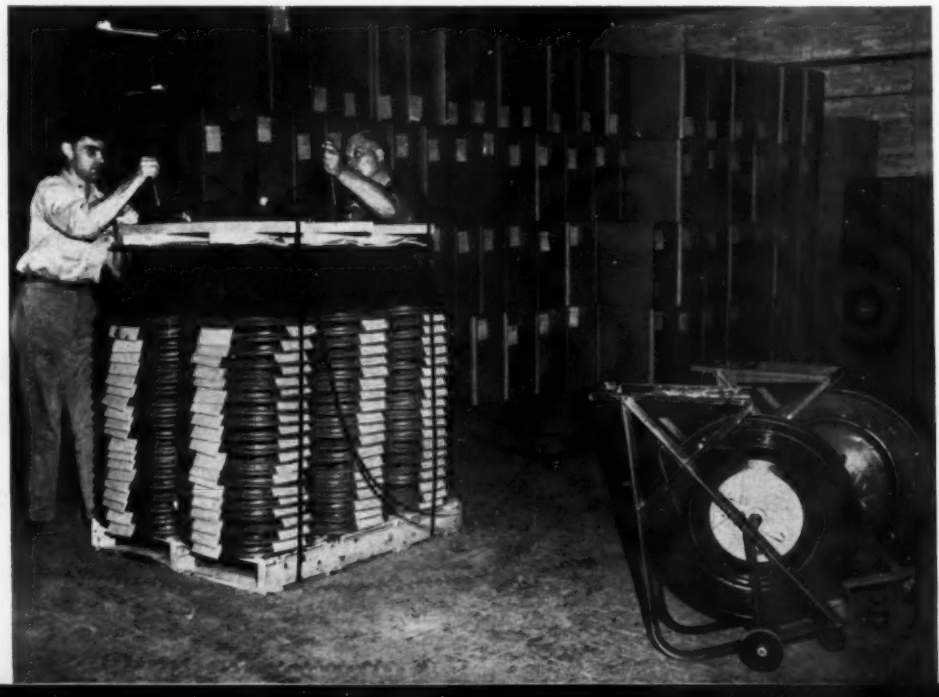
Handling enameled steel TV cones

(Production story continued from Page 33)

SOME difficulty was encountered in the early stages from shipping losses. Loose packing permitted shifting of the loads with resultant damage to the enamel coating. This was true even when the distances traveled by the trucks were only a matter of a few miles. Strapping too tight caused compressing, thus causing distortion, and in many cases chipping, in transit. These problems were overcome by redesigning the packaging.

The present method of handling has proven very satisfactory. Changing the size of the skid or pallet, widening the corrugated paper separators and the paper ring separators has reduced transit damage and increased the size of loads that can be handled at one time by a lift truck.

The finished cones are stacked immediately after inspection into six piles of twenty cones each per skid. The skids are metal strapped in two directions over the top of each stack, wooden 2 x 4's having first been laid across the top. This produces a firm load which can be placed on the carrier by a lift truck and transported without damage. The cones are then sent on their way to the tube manufacturer where they are assembled with many other highly technical components to form kinescopes for home television sets.



Method of strapping pallet load of finished cones at Ing-Rich plant for shipment to tube manufacturer.

CUSTOM DESIGNED

HEAVY-DUTY SHIPPING CONTAINERS

PERFECTION STOVE speeds packing, stacking, handling

Perfection Stoves have been shipped in INTERNATIONAL's specially designed cap and tube shipping container for over two years with these successful results.

1. **Special Interlock-type cap and tube construction permits easier and more efficient lifting holds—without the use of forks or gripping irons. It enables faster handling and closer stacking.**
2. **Time-study proves consistent and exceptional saving in packing.**
3. **Minimum of uncrating hazards—no nails, and you need no hammers or pinch-bars.**
4. **Tare weight reduced.**
5. **Large clean surfaces give ample room to print information and advertising.**
6. **This custom designed heavy-duty shipping container is approved by the Freight Classification Committee and is accepted by the railroads as an approved container.**

Let us tell you more about the advantages of this specially developed container—and other International containers designed for specific jobs. Write us at any of the manufacturing plants listed below.

The lift truck inserts the lifting flange under one side of cap and pulls up. The strong construction enables sure, fast lifting and close stacking.

International Paper company

CONTAINER DIVISION

220 East 42nd Street, New York 17, N. Y.

Los Angeles 54, Cal. 5120 South Soto St.
Kansas City 3, Kan. 2102 Kansas Ave.
Somerville 45, Mass. Clyde & Warwick Sts.
Wooster, Ohio 689 Palmer St.
Springhill, Louisiana
Georgetown, So. Carolina
St. Louis 11, Mo. 7901 Michigan Ave.
Chicago 38, Ill. 5133 West 65th St.
Whippany, New Jersey

ADVERTISERS' INDEX

JOHN WOOD COMPANY ACQUIRES FLOYD-WELLS

Victor Mauck, chairman, John Wood Company, has announced that negotiations have been completed for the purchase of The Floyd-Wells Company, of Royersford, Pa., manufacturers of Bengal gas and combination ranges.

With the acquisition of Floyd-Wells, John Wood Company and its Canadian affiliates have an integrated network of nine plants located in Conshohocken and Royersford, Pa.; Chicago, Ill.; Muskegon, Mich.; and St. Paul, Minn. Canadian plants are located in Toronto, Winnipeg, Montreal and Vancouver. These plants produce automatic water heaters, ranges, gasoline pumps, service station equipment, metal dairyware, tanks and storage vessels.

John Wood officials pointed out that members of the supervisory staffs of both firms will confer frequently to formulate plans and exchange ideas on production, marketing and sales promotion. It was also stated that there will be no change in supervisory personnel now engaged in operation of The Floyd-Wells Company.

LUX CLOCK PLANS OPENING OF TENNESSEE PLANT, NOV. 1

The Lux Clock Manufacturing Co., Inc., Waterbury, Conn., has announced that its new plant under construction at Lebanon (near Nashville), Tennessee, is scheduled to swing into operation on November 1.

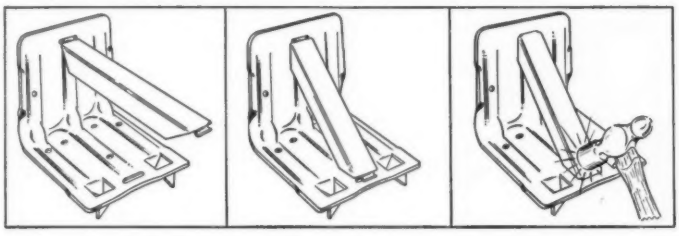
A major part of the productive capacity of the home appliance industry is located within a 500-mile radius of Lux's new Tennessee plant. According to Fred Lux, president, this was a primary reason governing the decision as to plant location. Lux will produce precision timing instruments in the plant.

INCREASED *"Holding Power"*

DOUBLE the number of PRONGS...
DOUBLE the "holding power"
IN

DEVILCLAW
BLOCKING ANGLES

(Patents Pending)



1. Insert tongue of No. 41 K-STRUT into top socket of No. 44 Blocking Angle.

2. Place other end of K-STRUT on base of No. 44 Blocking Angle.

3. Hammerblow sets other tongue of K-STRUT into bottom socket of Blocking Angle.

NOW FOUR PRONGS deliver increased "holding power" to this new Devilclaw No. 44 Angle.

Our newly patented K-STRUT, when added to our standard No. 44 Devilclaw Angle, gives the shipper a "holding power" against impacts up to 28,000 pounds.

DEVILCLAW
No. 41 K-STRUT
(Patents Pending)

When installed on our No. 44 Blocking Angle, the whole unit develops "holding power" to withstand impacts up to 28,000 pounds.

A letterhead request, referring to this advertisement, will bring Free Samples for testing in your own plant.

Our new Devilclaw No. 44 is the *superior* Car Blocking Angle you've been waiting for! A new DOUBLE PRONG design with DOUBLE the "holding power". Made of 11 gauge steel in a size 4″ wide, 4″ deep by 4″ high in the pattern illustrated.

NOW . . . four *husky prongs* (double the usual number) give *more protection* to boxed, crated or palletized shipments.

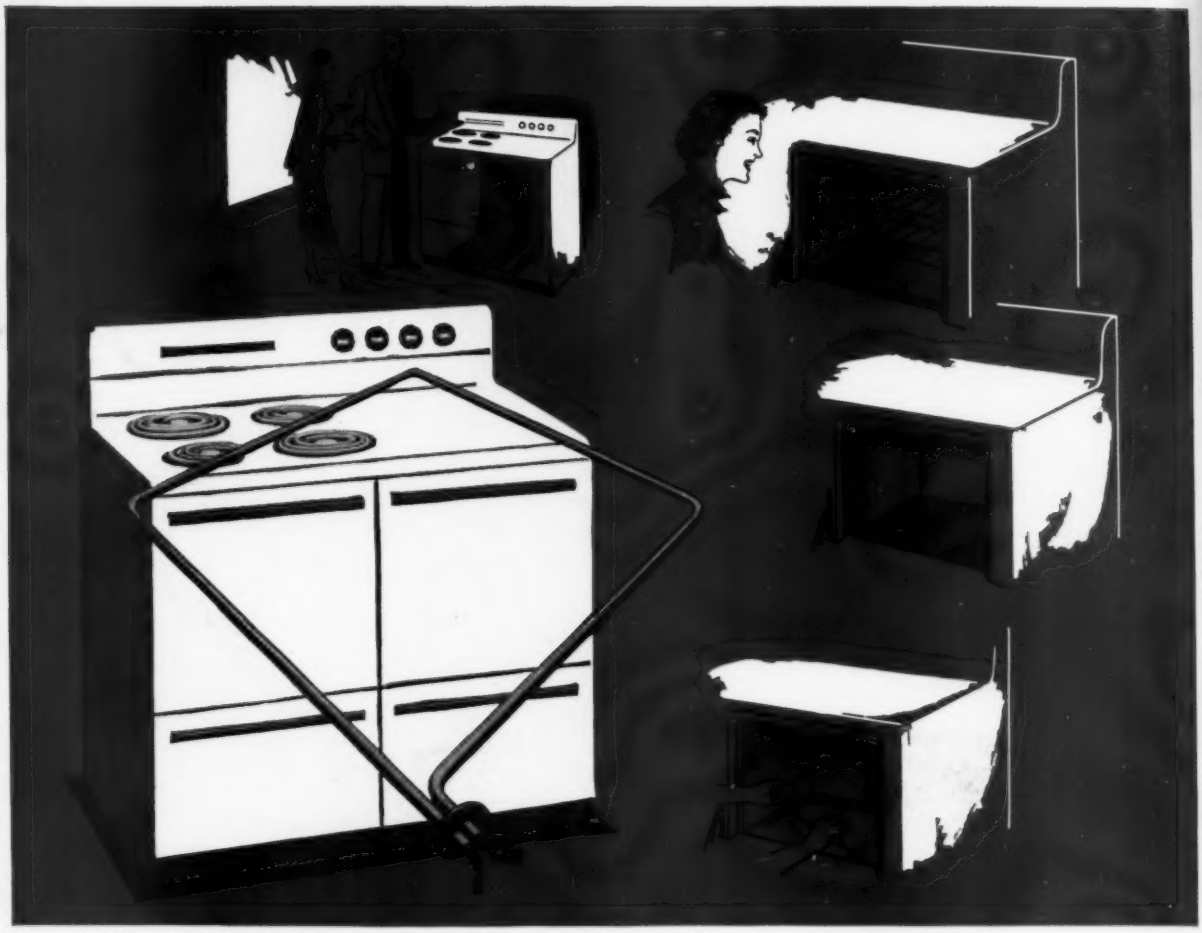
For "increased holding power" against *severe impacts* during transit, we offer the newly patented Devilclaw No. 41 K-STRUT. Made of 11 gauge steel channel with easy locking tongues, the K-STRUT *plus* our No. 44 Angle, develops "holding power" to *resist impacts up to 28,000 pounds!*

Save Money, Speed Loading, Prevent In-Transit Damage . . . by loading with Devilclaws!

CAR BLOCKING, INC. MANUFACTURERS

1952 KIENLEN AVE. ST. LOUIS 20, MO.

BLOCKING DEVILCLAW ANGLES



this new SELLING feature can save you money

with TK® Rod-type Oven Units

Here's a new sales feature your dealers (and their customers) will *love.* Better yet, it can save *you* money! For when you switch to TK's new rod-type oven unit you can eliminate baffles in your oven construction. TK's new unit does a superlative cooking job with or *without* baffles.

Easier Cleaning—Hinged at one corner, these units are easily swung up and away from the oven base for fast, easy cleaning. They are also available with bayonet-type connections for standard oven installation. The sealed, rod-type construction makes these new units immune to spilled foods, rust or corrosion . . . an important feature range buyers will like.

Another development in "SIMPLIFIED COOKING"
Used with *Monotube*® Surface Units, TK Rod-type Oven-Elements give you a powerful selling story to women. *"Simplified Cooking"* carries real appeal. Why not ride with this winner?

TK FERRO

TUTTLE and KIFT, INC.

A Subsidiary of Ferro Corporation

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